

NE

Soybean Digest



Per 22ND ANNUAL
CONVENTION
ISSUE

Official Publication

OF

THE AMERICAN SOYBEAN ASSOCIATION

VOLUME 2 • NUMBER 11



SEPTEMBER • 1942



KEEP HIS GUN BARRELS HOT WITH SOY BEANS

Oil from the once lowly soybean is pouring nitro-glycerin into Uncle Sam's powder magazine. A bumper crop this year will help blow the Axis to Kingdom come.

No harvest in history ever was more critical. Soybeans are vitally needed to offset the billion pounds of oil looted by the Japs in the Far East.

The situation is a direct challenge to every All-Crop Harvester in service. It is certain that not enough new machines are available to supply the thousands of new growers. Veteran machines will have to carry the burden ...and fortunate we are that so many All-Crop Harvesters are veterans!

The demand for All-Crop Harvesters will be heavy and the waiting lists long. *It is an obligation of every All-Crop Harvester owner that his machine work overtime as long as it is needed in the community. More than ever, soybean*

growers this year will draw on the Allis-Chalmers dealer's rich store of knowledge and experience, will count on him to keep equipment in tip-top running order. He will go out of his way to help you locate a used All-Crop Harvester or a custom machine, if a new one is not to be had.

It will pay you to cross the county if necessary to locate an All-Crop Harvester. Iowa State College tests charge the binder with losses up to a fifth of the crop. We can't afford to waste that many beans this year.

Reserve your worn-out binder for the National Scrap Harvest, and buy War Bonds with what it brings. Uncle Sam will use the oil from your soybeans to send it special delivery to Berlin with a charge of TNT behind it.

ALLIS-CHALMERS
FOR THE FARMER AND THE FARM



ALL-CROP HARVESTER

"Successor to the Binder"



In 1941, in the territory within 25 miles of The Nickel Plate Railroad in Ohio, Indiana, and Illinois
53,681,700 Bushels
of soybeans were produced.

NATURALLY, THE NICKEL PLATE IS VERY SOYBEAN-MINDED

THE NICKEL PLATE RAILROAD

TERMINAL TOWER

CLEVELAND, OHIO

If You Have Poultry or Livestock
and
If You Are a Soybean Grower

Then you should be feeding Purina Chows. These feeds are supplements to your grain and they are made to do a more profitable job of producing pork, eggs, or milk than straight grain will do. And they use soybean meal as a major source of protein. In fact, Purina Mills is the largest user of soybean oilmeal in the country. Use the feeds that utilize the beans you grow! Purina Mills, St. Louis, Mo.



THE Soybean Digest

GEO. M. STRAYER, Editor KENT PELLETT, Managing Editor
Publishers' Representatives: Ewing-Hutchinson Co., Chicago

Vol. 2 SEPTEMBER ☆ 1942 No. 11

IN THIS ISSUE

	Page
Report 22nd Convention.....	4
C. C. C.'s Market Program.....	5
Soybean Proteins	7
Soybeans in Lend-Lease.....	8
Soybeans in World Nutrition.....	9
Proteins in Flour.....	10
Soybeans in the Army.....	11
Making the Public Protein-Minded.....	12
September Crops	14
New Bean Parity?.....	17
Oil Chemists Meet.....	18
Oil Refiners Contract.....	24

Published on the 15th of each month at Hudson, Iowa, by the American Soybean Association. Entered as second class matter November 20, 1940, at the postoffice at Hudson, Iowa, under the Act of March 3, 1879. Forms close on 10th of month. Subscription price to association members, \$1.00 per year; to non-members, \$1.50 per year.

MARKET SUMMARY

SOYBEANS			
	Sept. 10	Aug. 22	Aug. 8
October	1.70	1.70 1/4	1.72 1/4
December	1.71 1/4	1.71 1/4	1.73 1/4
SOYBEAN OIL			
	Sept. 5	Aug. 24	Aug. 1
Tanks, Midwest Mills.....	11 1/4	11 1/4-T	11 1/4-1/8
SOYBEAN MEAL			
	Sept. 9	Aug. 24	Aug. 7
October	34.00 @	35.50 B	35.75 @
	35.50		36.50
December	33.00 @	34.60 @	35.00
	34.00	36.00	sales

Futures trading in soybeans for the month was virtually at a standstill, with only 1.9 million bushels contracted during August as compared to 82 millions the same month a year ago. Meal markets were also quiet with a slight tendency to weaken, but oil was more active with prices at times pushing against the ceiling.

CASH CONVERSION SCALE

1 Bushel Soybeans, wt. 60 lbs.....	1.712
INTO	
8.8 lbs. Crude Oil @ 11 1/4c.....	1.034
49.6 lbs. Meal @ 1.737c.....	.861
	1.895
Gross Processing Margin per Bu.....	18.3c
Gross Processing Margin per Bu. Last Month.....	14.7c

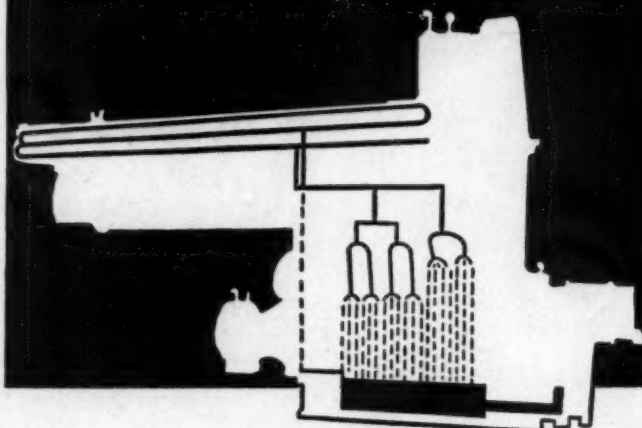
Note: This scale is based upon soybeans with average moisture content of 14 percent or less (No. 2 yellow beans). For beans of higher moisture content allowances for shrinkage must be made. The values listed here are relative, and cannot correspond with your own transactions. Using your own figures, you can compute your own scale. This scale will show general trends.

STANDARD SHORTENING SHIPMENTS

By Members of Institute of Shortening Mfgs., Inc.

Week ending August 9.....	9,849,092
Week ending August 15.....	9,708,309
Week ending August 22.....	11,334,939
Week ending August 29.....	13,626,442

Be sure your
pressing equipment has
this **OIL COOLING**

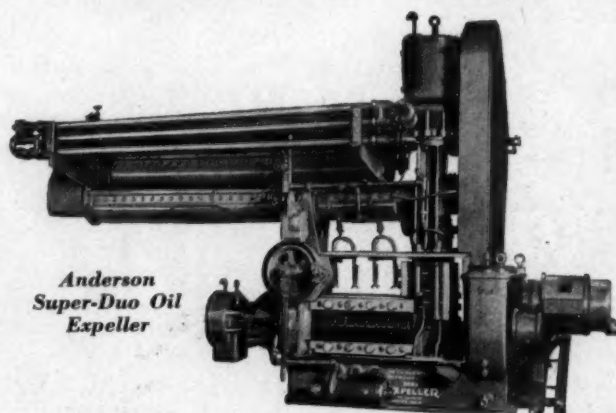


WHEN considering new equipment for handling soybeans, make sure that the equipment you install has the oil-cooling system shown above. This type of oil cooling has shower baths of cool oil constantly pouring over both the vertical and horizontal barrels of the Expeller. These oil showers keep the temperature of the barrels at the right point to insure the production of a light colored oil and a meal toasted to exactly the right degree to produce the famous Expeller toasted "nut-like" oil meal. Only an Anderson Expeller has this oil cooling system.

Oil cooling, however, is but one of the exclusive advantages of the Anderson Super-Duo Expeller. Write today and let us give you complete information on Expellers, the pressing equipment that handles more soybean production than all other types of equipment combined.

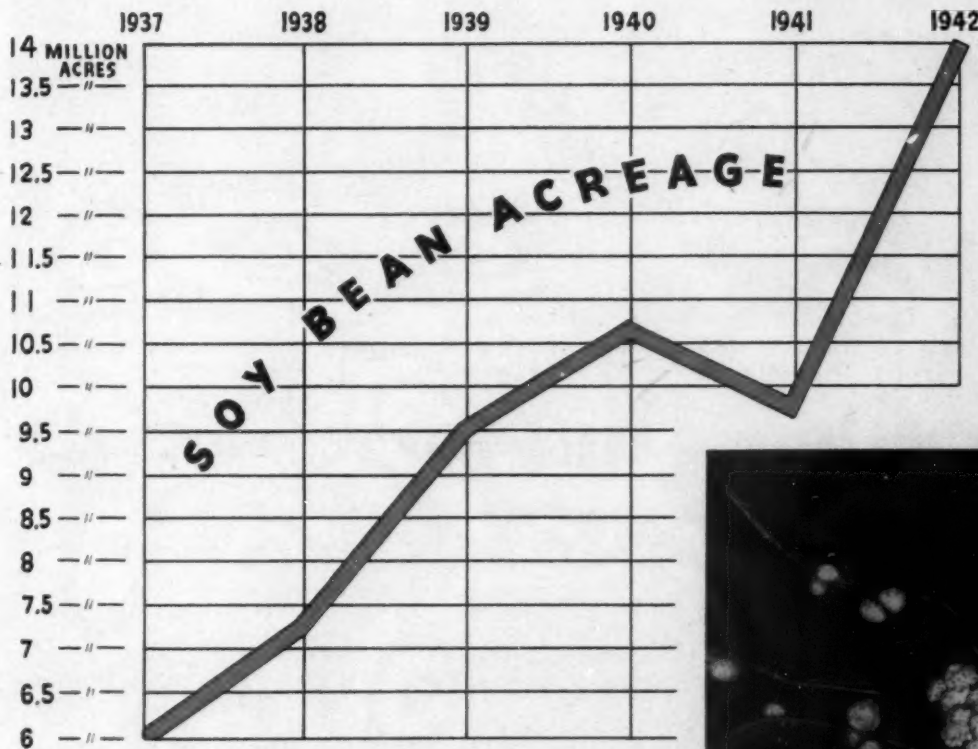
THE V. D. ANDERSON CO.

1958 West 96th Street • Cleveland, Ohio



Anderson
Super-Duo Oil
Expeller

Make Every Soybean Field a NITROGEN FACTORY



← The rapid increase in the acreage of soybeans is shown in this chart, based on USDA reports. The sale of NITRAGIN inoculation has increased correspondingly and so far this year enough inoculation for over 1½ million bushels of seed has been shipped.

These root nodules serve as "Nitrogen factories" on soybeans and other legume plants. The photograph below shows a soybean root with nodules produced by effective strains of NITRAGIN inoculation.



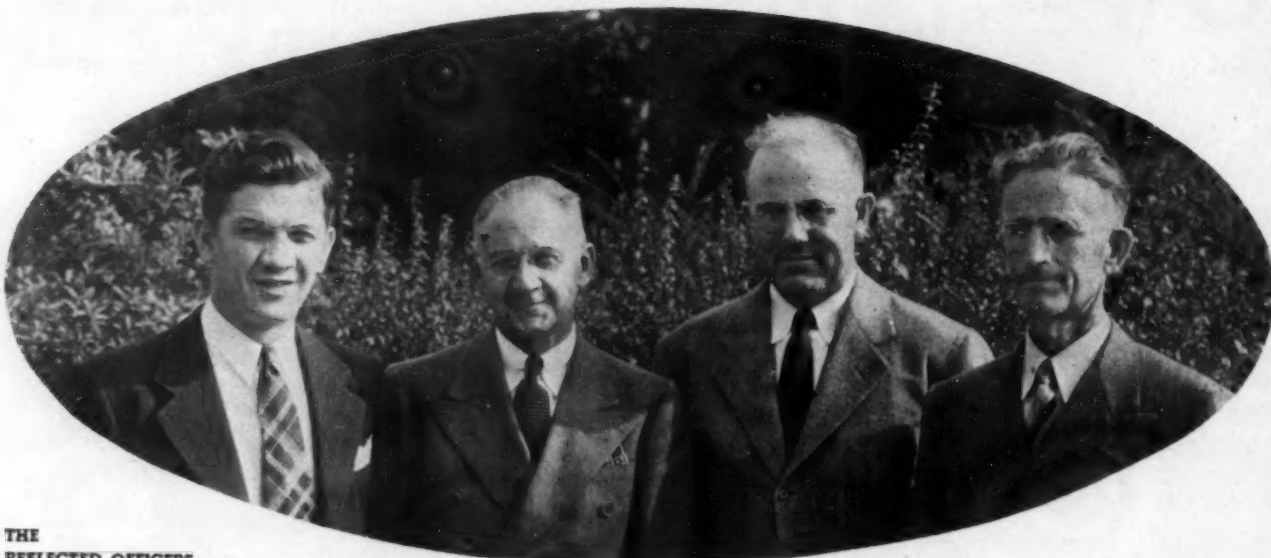
With our customary sources of many vegetable oils cut off by the enemy, soybeans loom as one of our most critical crops. At the same time another critical shortage is arising in nitrogen fertilizers. Much of the nitrates formerly used in commercial fertilizers are now needed for explosives. But our soybean crop is capable, if properly inoculated, of storing as much nitrogen in the soil as would be supplied in any ordinary application of fertilizer. While much of this may be removed when the crop is harvested, it still is better to grow a legume which derives so much of its nitrogen supply from the air instead of taking it from the soil as non-leguminous crops do.

The importance of inoculating with specific soybean strains of nitrogen-fixing bacteria has been emphasized by agricultural authorities again and again. Since the results cannot be determined in advance the soybean grower must buy his inoculant on faith. That soybean growers have this faith in NITRAGIN is evidenced by its unquestioned sales leadership, its long service to farmers (over 43 years) and its unequalled laboratory facilities for the production of dependable, high-quality legume inoculants.

THE NITRAGIN COMPANY
3872 N. Booth St. MILWAUKEE, WIS.



YOUR PROTECTION. The name NITRAGIN is a registered trademark put on every can. It identifies for you the only inoculant containing NITRAGIN's highly effective strains of legume bacteria. This trademark is your protection.



**THE
REELECTED OFFICERS**

Left to Right: Geo. M. Strayer, secretary, Hudson, Iowa; J. E. Johnson, vice president, Champaign, Ill.; David G. Wing, president, Mechanicsburg, Ohio; and J. B. Edmondson, treasurer, Clayton, Ind.

SOYBEANS for FREEDOM • Report 22nd Convention

SELDOM does an organization achieve a program of such outstanding merit as that of the American Soybean Association Convention which closed at Purdue University September 17.

Attendance was good despite transportation difficulties, and all branches of the industry were well represented. Accommodations for the Convention at the Purdue Union were excellent. To say that there was never a dull moment is to state the case negatively.

American existence is being transformed before the hurricane of war. Many old ways of thought, processes and products are quickly cast aside. Others, such as the soybean, are rushed to the front. An insignificant crop not many years ago, today the bean takes equal rank with cotton as the chief domestic source of oils.

Yesterday the soybean was a stranger in the American diet, but today, due to the impending animal protein shortage, the industry will have to provide large quantities of high quality protein foods for human consumption, as well as feeds for livestock rations. This was the picture the speakers unraveled before the convention.

The present importance of the soybean explains why the U. S. Department of Agriculture was willing to send so many of its aces to the convention at so critical a time. Possibly of most significance was the panel on "Soybeans in Human Food" led by A. M. Dickson of the Agricultural Marketing Administration.

Mimeograph Copies

So great was the immediate demand for copies of the papers given at the convention, that the *Digest* has prepared mimeographed copies of all speeches. These may be obtained from *The Soybean Digest*, Hudson, Iowa, at the cost of 10c each, or a complete set for \$1.80.

Following is the list of papers available:

Soybean Oilmeal and the War, Lyman Peck, Soybean Nutritional Research Council.
Soybean Oilmeal in Wartime Economy, D. J. Bunnell, Central Soya Co., Chicago.
Soybean Research at the Northern

Regional Laboratory, H. T. Herrick, Director, Peoria.

Making the Public Protein Conscious, Dean H. J. Reed, Purdue University.

Soybean Oilmeal in Poultry Feeding, Prof. C. W. Carrick, Purdue University.

Soybeans as Human Food, A. M. Dickson, Agricultural Marketing Administration, Washington.

A Message to Soybean Growers, H. A. Olendorf, Soy Flour Association, Chicago.

Recent Work of the Bureau of Home Economics on the Use of Soybean Products as Food, Dr. Louise Stanley, Bureau of Home Economics, Washington.

Soybeans in the Lend-Lease Program, Donald S. Payne, Agricultural Marketing Administration, Washington.

Soybeans in Mineral and Vitamin-Enriched Bread, Dr. J. A. LeClerc, Bureau of Agricultural Chemistry and Engineering, Washington.

Soybean Products in Food Manufacture, A. A. Levinson, the Glidden Company, Chicago.

The Place of Soybeans in Advancing World Nutrition, M. L. Wilson, Director of Extension, Washington.

Growth Promoting Values of Proteins in Various Flours, Dr. D. Breese Jones, Bureau of Agricultural Chemistry and Engineering, Washington.

Soybeans in the Army Diet, Col. Rohland A. Isker, U. S. Quartermaster Corps, Chicago.

Soybeans in the Food-for-Freedom Program, C. C. Farrington, Commodity Credit Corporation, Washington.

Soybeans from the Practical Farmer's Viewpoint, J. B. Edmondson, Clayton, Ind.

Protein Feeds in the Western Range Country, L. F. Mollin, American National Livestock Association, Denver.

Soybeans Around the World, Dr. W. J. Morse, Department of Agriculture, Washington.

Many of these papers appear, in somewhat abbreviated form in some cases, in this issue of the *Digest*. Others will be published in later issues. Watch for them.

Officers Reelected

"This being no time to swap horses," as Jacob Hartz, chairman of the nominating committee expressed it, all officers and directors of the American Soybean Association, were renominated and reelected at the convention, from "Dave" Wing down.

The officers:

David G. Wing, President, Mechanicsburg, Ohio.

J. E. Johnson, Vice President, Champaign, Ill.

George M. Strayer, Secretary, Hudson, Iowa.

J. B. Edmondson, Treasurer, Clayton, Ind.

The directors:

G. G. McIlroy, Irwin, Ohio.

Ersel Walley, Fort Wayne, Ind.

Howard Roach, Plainfield, Iowa.

Stuart Ormsby, Belleville, N. Y.

John Dries, Saukville, Wis.

Jacob Hartz, Stuttgart, Ark.

— s b d —

Secretary's Report

Those of you who have been reading *The Soybean Digest* are familiar with the work and policies of the American Soybean Association during the year and with action taken by the officers and board of directors. For those not familiar may I say that the board met once during the year — in December, for an all-day session at Chicago. The minutes of this meeting have been read to you.

During the year which has intervened since the last convention, your secretary has spent the major portion of his time answering correspondence. Of the \$600 in the office expense item of the financial report, the major portion is for postage. From 10 to 40 personal letters per day — to all parts of the world — have been written. The

(Continued on page 6)



C. C. FARRINGTON

"Storage problem most important"

By C. C. FARRINGTON

**Vice President Commodity Credit Corporation
Washington, D. C.**

COMMODITY Credit Corporation, in cooperation with other agencies of the Department of Agriculture, the War Production Board, and the Office of Price Administration, is developing a comprehensive program for dealing with marketing, storage, and processing problems of the four major oilseed crops — cottonseed, soybeans, flaxseed, and peanuts. Some of the important parts of this program have been completed and announced during recent weeks.

On August 15, 1942, the Acting Chairman of the War Production Board, issued Directive No. 7 delegating to Commodity Credit Corporation authority to direct the use of facilities suitable for the storage and processing of soybeans, cottonseed, peanuts, flaxseed, and the products of these oilseeds. This directive authorizes Commodity Credit Corporation to specify the terms and the acres of purchase and sale of these oil crops and oil crop products.

Shortly after the issuance of this directive, the President of the United States, upon the recommendation of the Secretary of Agriculture and the Price Administrator, authorized the Commodity Credit Corporation to engage in such purchase, resale, and subsidy operations as might be necessary to facilitate the orderly movement of oil crops into processing, storage, and consumption channels. These subsidy operations will be designed to prevent the formation of bottlenecks which might result from the inadequacy of margins between the Government support prices for oilseeds, on the one hand, and the price ceilings on oilseed products, on the other.

On the basis of these authorizations we have worked as rapidly as possible in completing and announcing the various segments of the 1942 vegetable oilseeds programs — particularly those parts of the program which relate to prices of oil crops and their products. In developing this program, we have aimed at the following objectives:

(1) To assure adequate production of vegetable oils and cotton linters to meet all military, lend-lease, and domestic needs; and to acquire and maintain a reserve stock of vegetable oils and oilseeds.

Commodity's Market Program

(2) To implement the price-supporting programs announced by the Secretary of Agriculture with respect to soybeans, peanuts, and flaxseed; and to provide comparable price protection for producers of cottonseed.

(3) To make vegetable oils available to the manufacturers of vegetable oil products at prices which would permit the sale of those products to wholesalers and retailers at prices making it possible to maintain the Government retail price ceilings.

(4) To make soybean, cottonseed, peanut, and flaxseed oil meal available to livestock producers at prices which will encourage the increased production of livestock products needed in the war effort; and to avoid excessive accumulation of such oil meals.

(5) To make the maximum use of normal channels of distribution in achieving the objectives of the program.

(6) To avoid unnecessary use of transportation facilities.

Refiners Contract

One of the first and most important segments of the program was the agreement worked out with refiners. Under this agreement refiners will acquire and hold reserve stocks of oil for the account of Commodity Credit Corporation and the Corporation will resell this oil to refiners as it is needed at a reduction in price of 1/2-cent per pound.

Not all of the provisions of the soybean program have been worked out but the processing contracts were mailed to all plants on September 9 and it is expected that the provisions of the program as they relate to country elevators, terminal elevators, and others engaged in the merchandising and storage of soybeans will be available shortly.

Two types of contracts have been offered to soybean processors. Under one contract designated as Form A the Commodity Credit Corporation agrees to support the prices of soybean oil and soybean oil meal in consideration of the processor agreeing to pay not less than the announced support

prices for soybeans. The other type is somewhat more complicated since it involves the sale of soybeans from the processor to Commodity Credit Corporation at the support-price levels and the resale of those soybeans to the processor at lower prices based on the value of the products from the soybeans less a processing margin.

Processor Contract

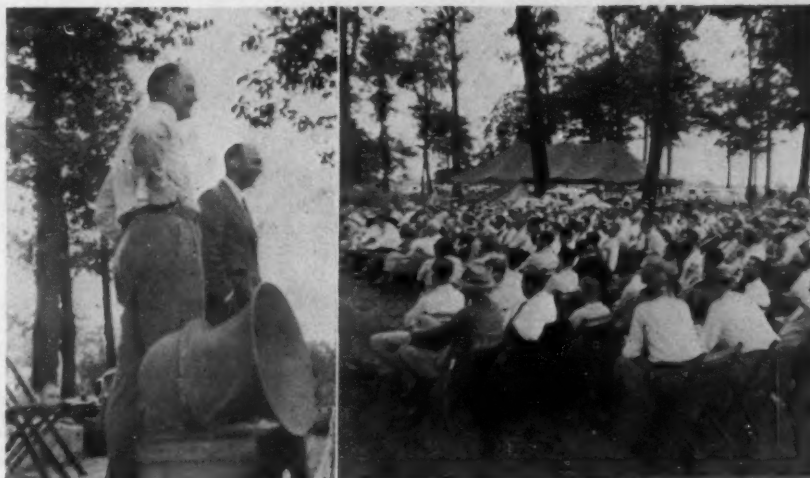
Under both contracts soybean oil prices are supported at the ceiling level and bulk meal prices are supported at an initial basic price of \$30 per ton. This basic price will be increased gradually during the year until it reaches \$32 per ton in July 1943. To this basic meal price bagging costs and transportation differentials are added in determining minimum sales prices. On less than carload lots, a minimum f.o.b. plant price is established for all plants by adding to the basic price a differential at \$2 per ton as an allowance to cover cancelled freight or trucking charges on the soybeans from which such meal was produced.

On carlot sales, minimum sales prices are determined as a general rule by adding to the basic price a transportation differential based on freight charges on meal from the principal soybean-producing area of central Illinois to the meal delivery point. There are, however, three important exceptions to this general rule. In the first place, any plant may sell its meal within its own area at 75 cents per ton below the minimum price determined by the general rule. The purpose of this exception is to enable processing plants to sell more of their meal in the area adjacent to the plant and thus conserve transportation.

The second exception is that meal may be sold in the Northeast and in the area generally west of the Mississippi River and north of the Missouri River at a price of \$2 per ton below the minimum price determined by the general rule. All of these areas consume more meal than they produce and they appear to offer the greatest possi-

(Continued on page 28)

At left, Commodity's C. C. Farrington (right figure) addresses American Soybean Association convention crowd at Purdue University Experiment farm Sept. 17. With him is Prof. R. E. Beeson, University agronomist, who presided at the University farm program. At right is a part of the crowd of 600 who attended the Thursday afternoon program.



22ND CONVENTION

(Continued from page 4)

mere answering of correspondence is in itself no small job.

The *Soybean Digest* has, I feel, made some progress during the year. You are aware that advertising schedules have been cut. Farm machinery advertising, for instance, is practically non-existent. In spite of that fact, we have been able to more nearly pay costs of publication from advertising revenue than during the first year. As we moved along it became more evident that our initial advertising rates had been set too low. It also became apparent that under existing circumstances it would not be possible for us to sell enough advertising by correspondence to keep our publication growing. After much figuring and conferring, we decided to take two steps:

1. Turn advertising solicitation over to a reputable firm of established publishers' representatives, with men in the field familiar with advertising solicitation technique.
2. Raise advertising rates a sufficient amount to cover increased paper and printing costs, as well as the costs of solicitation, and in line with increases made by other publications.

Both steps were taken. The Ewing-Hutchinson Company of Chicago was selected as our representatives. They started making contacts about July 1, and the September issue, which will be twice the normal size, will be the first issue showing the results of their work. We believe that Mr. Hutchinson and his associates, through their program of personal contacts can increase our advertising lineage considerably. Several new accounts are already in view.

Editorially, we feel that *The Soybean Digest* has made same progress during the year. We have had an increasing number of manuscripts and stories submitted to us for publication, and feel that this is evidence of acceptance by research men and industrialists as a worthy publication. Each issue our problem is to summarize available material so we may carry as much as possible and include the most important items to a majority of our readers. I would especially like to thank the men at the Regional Laboratory, formerly at Urbana, now at Peoria, for their cooperation throughout the year. Everyone in the industry has been most cooperative when called upon for information or assistance. That cooperation has made *The Soybean Digest* possible.

Advertising and promotional assistance given by the soybean processors, and by their organization, the N. S. P. A. has made continuation of *The Soybean Digest* possible. To their president, E. J. Dies, and to all members, I want to extend my most sincere thanks. If the American Soybean Association and *The Soybean Digest* are progressive influences in the industry, it is due to their support.

The big problem confronting the American Soybean Association, in my estimation, is still that of adequate membership. It would seem that with the tremendous amount of interest in soybeans that we should be able to make more progress toward a membership of such size as would adequately represent the soybean growers of the nation. An active, paid membership of 25,000 growers is not at all impossible if we are willing to spend the time, effort and money necessary to make the contacts. We

must have increased membership to be effective.

For instance, the growers of soybeans throughout the nation should have been represented at the conferences in Washington where market policies of the soybean industry have been determined. Had we represented a larger segment of soybean growers of the nation and had the Association finances been such as to permit travel expenses for such trips, our Association should have been on the inside and had something to say about how the soybean crop is to be marketed this year. Until we can establish a more definite and all inclusive financial policy, we cannot expect to be called into such conferences.

During the coming year we must expect that there will be increased curtailment in all advertising budgets by companies who would have been advertising prospects for *The Soybean Digest*. That will mean less advertising support for the publication and will necessitate one of two things. The first of these is a membership increased to the point where subscriptions will stand the major portion of the cost of the publication and the operation of the organization. The second of these is increased advertising support from the soybean industry itself. It is our contention that we should have advertising support from handlers of soybean seed, from manufacturers of products directly allied to and used in the soybean industry and from some of the soybean processors who have not been willing to participate in any way in the support of the official publication of the industry. We feel that with two years of definitely established editorial policy behind us it will be possible for us to secure increased support from the members of the industry. The big part is that of stepping the membership of the Association and the circulation of *The Soybean Digest* up to the point where they will be self-supporting.

Last fall a rather comprehensive campaign to secure subscriptions was conducted through the grain elevators of the state of Illinois. Viewed in retrospect, it appears that probably our campaign was too comprehensive and did not do a sufficient amount of intensive work among the persons who are potential subscribers. At least we can only say that the campaign brought in about enough subscriptions to pay the cost of the campaign itself. Those subscribers are included in the present membership figure which was given in the financial report. While we have made progress in securing additional membership we have not yet scratched the surface of potential subscribers to *The Soybean Digest*. We must work out some system of increasing the membership.

This year *The Soybean Digest* came within \$800 of paying its full way without subsidization from the Association. This year is \$1200 better than the figure given you a year ago at the convention. It still is not good enough.

If I may quote from J. B. Edmondson's secretary report of last year, I would like to read you the last paragraph: It is:

"As a final word, allow me to urge all of you who are interested in seeing the present program of the Association continue to develop, that you give this matter some clear, constructive thinking. A definite, workable plan must be formulated that will

provide sufficient means for this development in the future."

We must provide a membership solicitation plan which will enable the organization to represent a sufficiently large number of the soybean industry to be influential in its accomplishments. We must provide sufficient membership to finance that type of a program. This is the year to do that job if we will but formulate the plan and then carry it through.

George M. Strayer, Secretary
AMERICAN SOYBEAN ASSOCIATION

— s b d —

Business Meeting

The annual business meeting of the American Soybean Association was called to order in the East Faculty Lounge of the Purdue Memorial Union at 9:00 a.m. on Wednesday, September 16, with President David G. Wing presiding. About 75 members were present.

The minutes of the annual business meeting of 1941 were read by the secretary and approved. Minutes of the winter board meeting held in Chicago on December 8 were read by the secretary and discussed by him.

The members of the board of directors for the 1941-42 year were introduced.

The secretary's report was given by George M. Strayer, secretary, who called for discussion of increase of membership in the American Soybean Association. Various members, including Jacob Hartz, Ed Dies, George Briggs and O. N. LaFollette participated in the discussion.

Moved by John Dries, seconded by Mr. Smith that the secretary's report be accepted as read. Carried.

The treasurers' report was presented by J. B. Edmondson. The motion was made by G. H. Banks, seconded by John Gray, that the treasurer's report be accepted as read. Carried.

Report of the resolutions committee was presented by Howard L. Roach, chairman. Moved by Roach that the report of the resolutions committee be adopted as read.

Moved by George Briggs that the resolutions be expanded to include provision of expression of appreciation of past efforts in behalf of the American Soybean Association by Frank Goodwine of West Lebanon, Indiana and B. S. Strayer of Hudson, Iowa, with expression of appreciation to be dispatched by the secretary to the families of the two men. Also that a letter of appreciation and cheer be dispatched to John T. Smith of Tolono, Illinois. Moved by Roach, seconded by G. H. Banks that the report of the resolutions committee with the proposed additions be accepted. Carried.

The report of the nominating committee was presented by Jacob Hartz who suggested that all 1941-42 officers of the American Soybean Association be returned to their present offices for the 1942-43 year. Moved by George Briggs, seconded by J. C. Hackleman that the nominating committee's report be accepted as read and a unanimous ballot be cast for these men as candidates. Carried.

President called for new business from the floor. Since there was none the secretary was called upon for announcements concerning the program scheduled for the two days.

Moved by G. G. McIlroy, seconded by Ersel Walley that the meeting be declared adjourned. Carried.

(Continued on page 18)



A. M. DICKSON

By A. M. DICKSON

Principal Marketing Specialist, Agricultural Marketing Administration, Washington, D. C.

MY FIRST experience with soybeans was in the early 1920's, when I was a County Agent in eastern North Carolina. We grew beans, gathered them with old-type harvesters, and either crushed them or shipped them to the midwestern states for seed. We were told that you planted them principally for feed.

The Crop

Estimates indicate that the tonnage of beans and the quantity of oil produced this year will be about the same as that for cottonseed, which for many years has been our largest source of vegetable oils. From a ton of soybeans you obtain about twice as much cake as you do from a ton of cottonseed. This means that this year you will have a lot of cake.

You already are making a great contribution to the war effort, but you will be told how you can make an even greater contribution, which all of us are anxious to do.

While the use of the garden or vegetable type of soybeans is most promising, emphasis will be placed on the use of processed field types and their products, principally because of their abundant production.

The flavor of both the field and the edible types is "beany" and penetrating until processed or cooked for food. As will be brought out this afternoon, the processed beans and cake are made into palatable protein concentrate foods with high nutritive value.

The Products

The soybean protein concentrate food products and tentative specifications used for purchases by the Federal Surplus Commodities Corporation are as follows:

(a) *Soybean meats, split or chipped* — dehulled and debittered; processed by steaming, drying, and removing hulls: Free from foreign material, containing all of the natural fat of the beans which shall be not less than 18 percent, not more than 3 percent fiber, not more than 10 percent moisture, and free of rancidity.

(b) *Full fat food flour* — dehulled and debittered; processed by grinding and air-

SOYBEAN PROTEINS

For Food

separating the bean meats described in (a) above: Free from foreign material, not more than 3 percent fiber, not more than 10 percent moisture, free of rancidity, not less than 18 percent fat, approximately 40 percent protein, and not less than 95 percent through a 120 mesh screen.

(c) *Low fat food flour* — dehulled and debittered; expeller processed, hammer-mill ground, and air separated: Free from foreign material, not more than 3 percent fiber, not more than 10 percent moisture, free of rancidity, not less than 5 percent or more than 9 percent fat, not less than 45 percent protein, and not less than 95 percent through a 120 mesh screen.

(d) *Low fat food grits* — dehulled and debittered; expeller processed, cut and screened to specified size: Free from foreign material, not more than 3 percent fibre, not more than 10 percent moisture, free of rancidity, not less than 5 percent or more than 9 percent fat, and not less than 45 percent protein, coarse, medium, fine, and very fine.

(e) *Low fat food flakes* — dehulled and debittered; solvent extracted and cooked: Free from foreign material, not more than 3 percent fiber, not more than 10 percent moisture, free of rancidity, not more than 4 percent fat, and not less than 49 percent protein.

(f) *Low fat food flour* — dehulled and

debittered; solvent extracted, cooked, and either rolled and bolted or hammer-mill ground and air separated: Free from foreign material, not more than 3 percent fibre, not more than 10 percent moisture, free of rancidity, not more than 4 percent fat, not less than 49 percent protein, and not less than 95 percent through a 120 mesh screen.

Uses

The processed bean meats are used as edible beans either baked or boiled, and in stews. The high fat food flours are used principally in bakery goods and cookery. In general, the soy products are not used alone but are used to raise the protein content of other foods. They can be blended with wheat flours in bakery products, mixed with breakfast cereals, used in the preparation of dehydrated and dry soup concentrates, and used in prepared meat products as an extender to maintain or raise the protein level. The size or texture of any of the products are varied to suit particular needs.

— s b d —

Soybeans have largely replaced the sunflower crop in southeast Missouri this year because of the better cash prospect, according to Seed Trade News.

ANNUAL SOYBEAN DAY

Intermittent downpours dampened the clothes but not the spirits of several hundred soybean enthusiasts who took part in Purdue University's annual Corn and Soybean Field Day, held in conjunction with the American Soybean Association's convention at the Experimental Farm September 17.

The soybean group was led by K. E. Beeson, the university's extension agronomist, in its tour of the plots. Other staff members of the agronomy department who led the discussions were Dr. G. H. Cutler, A. H. Probst, A. T. Mancko, M. O. Pence, George Enfield, George Scarseth, Al Ohrogge and R. R. Mulvey. Work with tillage, fertilizers, the corn-soybean-wheat rotation as well as the breeding plots were covered.

Indiana farmers are turning to beans after corn in order to plow under corn borers, and one of the problems in the breeding work is to develop a bean with proper date of maturity that will "click" with the wheat crop. Dr. Cutler showed interested onlookers single blocks with a thousand selections. By testing large numbers in searching for such qualities as high yield, non-shattering, high iodine number, high oil and protein content, earliness and lateness and adaptation to various localities, the finding of good varieties can be insured. From a block of a thousand selections may be obtained two or at most a dozen worth keeping. Among varieties attracting especial interest in the plots were the Gibson and Patoka released by the experiment station this year.

SCENES AT ANNUAL PURDUE FIELD DAY





By DONALD S. PAYNE

Senior Technologist, Agricultural Marketing Administration, Washington, D. C.

PROTEIN foods are indispensable to a nation in wartime. And it is a matter of public record that we are producing unprecedented quantities of meats, eggs, dairy products, and beans for our armed forces, our civilians, and our allies. But in recent months another protein food has come to the fore, and promises to take a permanent place in our wartime nutrition program. That food is soybeans.

The Agricultural Marketing Administration has inaugurated a new program to stimulate and foster the use of soya products, and this move clearly shows the Government's recognition of their high food value. The new program is designed to make this low-cost food available to the people throughout the United States as soon as possible.

Introduction of Soys

Admittedly, this is a big order. It means further research, extensive education, and continued industry cooperation. These are possible. The industry already has gained much experience in its introduction of soya products during the last few years. In addition, the Agricultural Marketing Administration has had some experience in large-scale utilization of these products through Lend-Lease purchases over the past 12 months.

The uses made of soya products among the United Nations point to the best ways in which to further the introduction of soya to the American people. The purchases

SOYBEANS IN LEND-LEASE

have included soya flour and grits, pork and soya links, dry soup concentrates, and concentrated cereal foods.

The soya flour and grits are being shipped overseas where they were used in meat products, commercial baking, soups, ice cream, and in place of milk.

More than 60 million pounds of soya flour and grits have been purchased by the Agricultural Marketing Administration this year for shipment to our allies and for school lunch needs. This is approximately 200 percent more than the domestic sales for any previous year. Next year the statistics on soy products for this year will look small.

The quantities of the several soya products purchased under Lend-Lease since July 1, 1941, are impressive in themselves, and more so when broken down by the amount of soya flour and grits contained in each.

In addition to the soya products, about 33 million pounds of soybeans were shipped the past year to Great Britain, where they were ground into full fat flour by the soya companies there.

School Lunch Program

Within the United States, the Agricultural Marketing Administration has taken an active interest in utilizing soybean products. For example, in last year's School Lunch Program approximately 5 million pounds of dehydrated soup were purchased and distributed to children in those schools eligible to receive school lunch commodities. This dehydrated soup contained 25 percent of soya flour or grits in addition to approximately 15 percent dry skim milk and about 45 percent dehydrated precooked legumes. This soup added a substantial quantity of high quality protein to the diets of the children who received it. In general, it has been well accepted. Its one drawback was its lack of variety in flavor and texture in day-after-day use.

Originally the School Lunch program was designed primarily for the feeding of undernourished children, and this remains the basic purpose of the program. Because soya products were available and contained high quality protein, it was natural, in the beginning, to include them in the School Lunch Program.

Now a reduced supply of meat for civilian consumers is foreseen, and other high quality protein foods are becoming scarce. Therefore, it is entirely probable that the regular meals of many families will become deficient in protein and that the School Lunch Program will have a greater importance in the feeding of children throughout

the country. In turn, the value of soya products for school lunches will increase. Wider use of soya products in school lunches, as in all programs, will hinge on further research by all interested groups. Through research we must work out a better variety of soups and other easy-to-prepare foods pleasing to the tastes of American children and adults, and this is one of the first essential steps of the new program of the Agricultural Marketing Administration.

The New Program

The program to encourage the production and consumption of soya products was formulated by Roy F. Hendrickson, Administrator of the Agricultural Marketing Administration. A special AMA committee has been appointed by Mr. Hendrickson to carry out the details. This program has as its ultimate aim widespread distribution of consumer packaged goods containing soya products.

Several immediate steps appear necessary before any large amount of these products can be placed on the shelves of retail stores. First is the continued research for better and thoroughly practical ways for using soya products in typical American foods. The Bureau of Home Economics will intensify its studies on the nutritive qualities and use of these products in food preparations. Second is the initiation of work to establish suitable standards and specifications.

Third, and very important to the success of the program, is the formation of an industry committee with representatives of the companies manufacturing soya products, cereal products, bakery goods, and meat products. Wholesale and retail distributors also will be represented.

Fourth is the determination of consumer acceptability to be followed by general retail distribution. Much can be learned by placing the products containing soya on the Food Stamp Program of the Agricultural Marketing Administration. Furthermore, we have the background that food industries have acquired in the development and sales of new food products.

Soya Flour Industry's Future

The present utilization of soya flour and soya food products under Lend-Lease and by other Government programs undoubtedly has been a great stimulus to the soya flour industry. A few years ago the total yearly sales of soya flour, grits, and flakes were only 25 million pounds. The capacity of the industry for producing these products was nearly twenty times this volume.

As previously pointed out, the total of soya products purchased for Lend-Lease has approximated 60 million pounds. This, combined with increased domestic demand during the past 12 months and the initial purchases by the Army, indicates a total production of approximately 100 million pounds of soya flour, grits, and flakes. This is about one-fifth of the present production capacity for these products. Therefore, in the span of one year, the industry has quadrupled its volume of sales of a practically new basic food commodity.

You men in the soya industry are an important part of Agriculture. This is your program and you must make it work.

Lend-Lease Purchases, July 1941 to August 1942

Item purchased	Quantity (Pounds)	Amount of soya flour and grits represented (Pounds).
Soya flour — full fat.....	29,115,000	29,115,000
Soya flour — low fat.....	3,420,000	3,420,000
Soya grits — coarse — low fat.....	3,420,000	3,420,000
Soya grits — fine — low fat.....	3,420,000	3,420,000
Dry Soup Concentrate.....	1,990,000	600,000
Dehydrated Soups.....	2,594,000	650,000
Cereal Concentrates.....	901,920	180,384
Pork and Soya Links.....	92,623,016	20,377,060
		Total — 61,182,444

The Place of Soybeans in Advancing

WORLD NUTRITION

By M. L. WILSON,
Director of Extension Work, United States De-
partment of Agriculture, and Assistant Director
of Defense Health and Welfare Services in
Charge of Nutrition

A YEAR ago, when Secretary of Agriculture Wickard coined his now famous saying "Food will win the war and write the peace," many people did not grasp its significance. American farmers did. They rolled up their sleeves and went to work. The result is that many records were broken in the production of critical commodities. This fall, as the world abroad stands at the gate of perhaps the greatest food crisis ever known, we appreciate the real importance of our system of agriculture.

A striking example of what can be accomplished under this strictly American system of agriculture is found in the progress of our soybean industry — a progress which practically parallels the brief history of the American Soybean Association. In 1924, we produced for beans about 448,000 acres and nearly 5 million bushels. In 1941, or in a period of 17 years, our total production for beans increased to 5,855,000 acres and nearly 107 million bushels. This places us third as world producers of soybeans. We are outranked only by China and Manchuria, and in this year 1942, the value of the indicated production for beans will be around 300 million dollars.

From Newcomer to Major Crop

Until a few years ago, the average American farmer regarded the soybean as a soil builder, as a source of industrial vegetable oil, and as a constituent of a well-balanced animal ration. During these years, however, there were a few pioneers who saw an additional future for the newcomer from the Orient.

In the Department of Agriculture, we take pride in saying that we have a specialist on practically every subject dealing with agriculture. The Department's specialist on the subject of soybeans is W. J. Morse. You know him. For a number of years he was the president of your association. It was through his enthusiasm — like that of the late Dr. Charles V. Piper who preceded him — and his fellow enthusiasts at the State experiment stations and in the State extension services, that we now have many new varieties of soybeans, many edible as vegetables, and a wealth of knowledge about how the Chinese, Manchurians, and other far-eastern peoples use soybeans as human food.

For a short period, during the first World War, soybeans were needed for fats. The dilemma of the soybean after the first World War was that its need as an emergency crop had subsided. Americans had not learned how to utilize it fully, industrially; how to prepare the edible varieties to suit popular taste; and how to process soybeans for greatest efficiency in human food or animal rations. Today we owe considerable gratitude to those extension workers who had faith in the crop and taught farmers how to increase yields; and to those processors who were willing to put up the money for processing plants in which soys could be ground into feed for livestock. Nor

should we overlook the importance of the AAA farm programs of the thirties which provided many incentives to farmers for increasing soybean acreage.

The Secret of 50 Centuries

So recent are many developments in the science of nutrition that we are only now beginning to understand why in the Far East soybeans have been recognized for 50 centuries as the poor man's meat. Few of the teeming millions would be able to tell us, in scientific terms, why this is so. But the coolie can tell us that without soybeans or soybeans in some other form in the diet he begins to get weak, fatigued, or exhausted.

The scientific explanation is, of course, that aside from fish in the maritime sections, the Far East has an insufficient source of easily digested proteins. China, Manchuria, and the surrounding countries are heavily populated. Their cultivatable land per capita could not begin to place the huge populations on the high-standard meat diet which most Americans are accustomed to. They must rely on soya food instead. Nutritional knowledge tells us that rice and the ordinary cereals, considered the staff of life in oriental countries, do not have enough proteins and vitamins to build and maintain buoyant health.

There is currently running a wartime news film illustrating how the Germans have made use of soybeans for the human diet. The statement has even been made that the *vaunted secret weapon of the Nazis lies in methods they have developed in the processing, milling, and cookery of soybeans for their armed forces and industrial populations*. Whether or not this is true, we do know that since the last war the Germans have gone in heavily for soybeans in the human diet. But such secrets, so-called, as they may have about processing and preparation for human use are also available to us. And we have what they don't have — vast acreages on which we can grow soybeans with a production technique that gives us the food power by which food will again win the war.

Public attention was focused on the importance of nutrition by the National Nutrition Conference for Defense called by the President in May 1941.

A Yardstick for Measuring Nutritional Needs

One of the outstanding contributions of the President's nutrition conference was the announcement of a standard of "recommended dietary allowances" by the Committee on Food and Nutrition of the National Research Council. This standard has been widely adopted throughout the country as a scientific basis for menus of varying costs. Meals based on this standard fulfill the minimum nutrient requirements for a well-balanced diet of people in different age and income groups.

The adoption of these nutritional stand-



M. L. WILSON

Is the Soybean the Nazis' Secret Weapon?

ards fills a great need, recognized as far back as 1933. At that time a series of dietary studies conducted under the leadership of Dr. Hazel K. Stiebeling of the Bureau of Home Economics showed great variations in the nutritional quality of meals eaten by people of different income levels.

Nutrition and Agricultural Planning

Dr. Stiebeling's studies entered into the planning of agricultural programs in 1935. At the urging of Secretary Henry A. Wallace, Howard R. Tolley, who was then head of the Progress Planning Division of the Agricultural Adjustment Administration, launched a Nation-wide program-planning study in cooperation with the land-grant colleges, experiment stations, and the State extension services. The recommendations growing out of the planning studies showed that, if a satisfactory food standard was to be enjoyed by all income levels of the American people, we needed an increase in dairy products, eggs, green and leafy vegetables, and crops insuring greater abundance of high-protein and protective foods. These objectives became a dominant part in the national farm policy. They dovetailed with the parallel objectives of soil conservation and the assurance of farm income. Agricultural-adjustment programs, soil conservation, farm security, surplus removal efforts, and farm-loan and storage provisions all combined to assure the American farmer and the American people of adequate supplies of food in times of peace and emergency, the Ever-Normal Granary, as Secretary Wallace called it.

A Yardstick for Determining Crop Goals

How the National Research Council dietary recommendations can be used in establishing crop goals has already been shown in a preliminary way by the Bureau of Agricultural Economics. There O. V. Wells worked out tables showing the food needs of our estimated 1942 population in terms of crop areas and animals required on the basis of three specific diets meeting the National Research Council standards. Wells' tables were published in a statement submitted to the Select Committee Investigating National Defense Migration, House of Representatives. Though they should not

(Continued on page 16)



D. BREESE JONES

By D. BREESE JONES and

J. P. DIVINE

Protein and Nutritional Research Division,
Bureau of Agricultural Chemistry and En-
gineering, Washington

THE World War has developed a situation that threatens a shortage of protein foods, particularly proteins from animal sources — meat, milk, and eggs. In fact, such a shortage is believed to be already impending, and that it will increase not only with the duration of the war, but for some time after hostilities have ceased. This situation demands that immediate consideration be given to the nutritional values of plant proteins that may serve in the diet.

There are three important agricultural crops that offer excellent possibilities for supplying plant proteins having a high nutritive value, and which are eminently suitable for use as human food in a variety of ways. These products are soybeans, peanuts, and cottonseed.

The question of protein requirements in nutrition is essentially a question of amino acid requirements. This does not mean, however, that a protein lacking in one of these amino acids may not serve a very important place as a protein food in the diet, since this deficiency can be corrected by the use of other proteins that contain the amino acid in abundance.

Practical feeding tests with farm animals as well as laboratory studies with small experimental animals have demonstrated that soybeans, peanuts, and cottonseed supply proteins of high nutritive value. However, there are little or no data available to show just how much better, if any, are the proteins of one than the other, or to indicate their specific values for supplementing protein deficiencies of other commonly used foods.

Most proteins, particularly plant proteins, vary greatly in the proportions of the different amino acids they contain. This fact emphasizes the wisdom of not depending on any one protein alone to provide for satisfactory nutritional requirements. The proteins of soybeans, peanuts, and cottonseed differ widely in their content of some of the nutritionally-essential amino acids, and consequently may vary in their value for sup-

Soybean and Other Proteins in Flours

plementing other proteins commonly used in the diet. As sources for supplying proteins to meet the threatened shortage they also have the economic advantage that each crop is produced in different sections of the country.

It is estimated that 36 percent of the protein used for human consumption in the United States is furnished by grains, chiefly by wheat. It would, therefore, seem that one of the most practical and efficient ways of utilizing soybean, peanut, and cottonseed proteins would be in combination of their flours with wheat flour. Wheat flour is known to be deficient in some amino acids that are abundantly present in soybeans, peanuts, and cottonseed. It has long been known that a palatable and nutritious bread can be made from a mixture of white flour and peanut or soybean flours. Such a mixture can be used also in many other ways.

Studies recently conducted in our laboratory on the comparative growth-promoting values of the proteins of soybean, peanut, and cottonseed flours, and also on their values for supplementing the proteins of wheat and patent wheat flour, have given some rather striking results.

Albino rats were fed diets in which the protein factor was supplied exclusively by the flours, and in the same quantity. The diets used were similar in every respect except for the kind of protein supplement under investigation and the experimental conditions and procedures were as much alike as possible in every respect. Twelve young albino rats were used in each group, equally divided with respect to sex and litter mates, and having initial weights of 56 to 60 grams. The feeding periods were 42 days. The experiments were conducted in an air-conditioned room at a temperature maintained at 76° plus or minus 3° or 4° F.

The flours studied were incorporated in the diet so as to supply 9.1 percent of protein. The following crystalline vitamins were added to the diet in amounts adequate to meet the requirements of the animals for the B-complex; thiamine, riboflavin, pyridoxine, calcium pantothenate, nicotinic acid, and choline. Cod liver oil (2%) furnished vitamin A. Osborne and Mendel's salt mixture supplied the mineral elements. Autoclaved starch was used as required to

adjust the diets to a protein content of 9.1 percent. The diets also contained 8 percent of fat, supplied partly by the oil-seed flours used, and the balance by addition of corn oil.

The soybean, peanut and cottonseed flours were expeller type of commercial products produced for human consumption, and contained 5.7, 8.1, and 15.4 percent fat, respectively. The patent wheat flour was commercially milled from the same wheat as was used. The whole wheat was ground to a fine meal in an experimental mill in the laboratory.

Altogether, fourteen lots of animals were used. The first five were used to determine the comparative protein values of the three oilseed flours, whole wheat, and the patent wheat flour when fed separately at 9.1 percent protein level. The other nine lots were fed mixtures in order to determine the relative value of the proteins of the oil-seeds for supplementing the proteins of the patent wheat flour. The mixtures consisted of 5, 10, and 15 parts of the oil-seed flours, and 95, 90, and 85 parts of the wheat flour respectively. The results are shown in the accompanying table. Inasmuch as the vitamin and mineral supplements were supplied in all the diets, the weight gains given represent protein values exclusively.

The figures in the first column show the average weight gains of the animals in each group over a period of 42 days. The second column shows the average gains in weight per gram of protein eaten and the last column the average food consumption during the 42-day periods. In every case the food contained 9.1 percent of protein. Comparing the first five sets of figures we see that the animals grew almost twice as much on the whole wheat as on the patent flour and almost four times as much on peanut flour. When calculated on the basis of gain in weight per gram of protein consumed the soybean flour was significantly superior to cottonseed flour.

Of particular interest are the results obtained with the mixed flours. A mixture consisting of only 5 parts of peanut flour and 95 parts of patent flour had a growth value of 29 grams as against 19 grams for wheat flour alone. Raising the proportion

(Continued on page 26)

The Growth-Promoting Values of the Proteins of Soybean Flour, Peanut Flour, and Cottonseed Flour — Their Values as Supplements to the Proteins of Wheat and Patent Wheat Flour

Lot No.	Flours Used	Average weight gain in 42 days	Average gain per gram protein eaten	Average food consumption
		gms.	gms.	gms.
268	Patent wheat flour.....	19	0.75	278
269	Whole wheat flour.....	36	1.15	342
271	Peanut flour.....	75	1.95	419
270	Cottonseed flour.....	85	2.05	455
288	Soybean flour.....	87	2.35	408
	Mixed flours			
272	P 5 + peanut.....	29	0.98	324
273	" 10 + ".....	44	1.32	367
274	" 15 + ".....	48	1.57	338
275	" 5 + cottonseed.....	24	0.91	291
276	" 10 + ".....	42	1.29	352
277	" 15 + ".....	42	1.30	352
289	" 5 + soybean.....	39	1.38	315
290	" 10 + ".....	75	2.16	381
291	" 15 + ".....	93	2.27	450

THE ARMY RATION

By COLONEL ROHLAND A. ISKER
Q. M. C., Subsistence Research Laboratory
Chicago, Illinois

THE American Soybean Association has had an uphill pull in having the soybean adopted as a food product. The principal reason for this, I believe, is that the market was flooded with soya products by unscrupulous manufacturers. We have had soya bean products submitted to our laboratory as a substitute for every food known. For the most part, these products are poorly prepared from a manufacturing standpoint, and were organoleptically undesirable in that the flavor, odor, appearance and keeping qualities were unsatisfactory.

Numerous poorly conceived soybean products were thrown together by firms that made no attempt to scientifically prepare foods containing soybeans. As a result, it has been the opinion of those responsible for Army dietary that soybean products which are admittedly nutritionally sound from a food technology standpoint, have not advanced to a point where wholesale adoption could be recommended.

Fortunately, this picture is gradually changing and we now have a situation where emphasis is being placed on turning out quality controlled products.

The other important factor in the soybean processing has been the development of adequate debittering operations. Approximately 60 patents have been issued in connection with the debittering of soybeans. Work on this problem should — and is continuing. The institution of experimental kitchens and laboratories by some of the more progressive soybean processors, and the acquisition of personnel who are trained food technologists, have given the edible soybean industry an impetus and merit that warrants the most serious consideration of our department.

The K Ration

At a meeting with the Soy Flour Association, I made the statement that I am fully aware of the nutritive value of soybeans and am using it in our K Ration — that any specification written on soy products by our Laboratory would be very rigid. This, I know will be of advantage to the Army and while eliminating some manufacturers, will eventually be of benefit to the soybean industry.

We now have a larger Army than we have ever had before and authorities are talking about a 10,000,000 Army. If the soldier is given a good soy product, he will come home as a booster of the soybean. If given a poor product, you will have 10,000,000 knockers of your product.

So far, the Army purchases have been confined to Soya Flour. We are now in the midst of preparing a specification relating to soy beans. This specification will call for the following types of soy products:

- (1) Low fat flour (expeller process).
- (2) Low fat flour (extracted).
- (3) Practically fat free flour (extracted).
- (4) Full fat flour.
- (5) Flakes and grits (extracted).
- (6) Low fat grits (expeller process).
- (7) Meats — dehusked, debittered, split or chipped.

In the formulation of individual food products that contain soybeans, reference will be made to this specification. This specification will be flexible and will be revised just as often as new types of soy products are developed warranting their inclusion in our specification.

From a technical standpoint, our specification will call for the following tests to be performed on these various types:

- | | |
|--------------|----------------------------|
| (1) Protein | (7) Absorption |
| (2) Fiber | (8) Screen analysis |
| (3) Ash | (9) Protein solubility |
| (4) Moisture | (10) Bacteriological count |
| (5) Fat | (11) Odor |
| (6) Color | (12) Flavor |

The Nutritive Story

Some of these tests have been previously fully described in the literature and necessitated no further work. Some of the other tests, however, such as color, absorption, and odor are new to the soybean industry and it has been necessary for new methods to be developed, and investigations are still being conducted at this time.

Numerous references in scientific literature have been referred to in connection with the nutritional story of soybeans. Intensive studies have been made available to us in connection with the following nutritional factors that are present in soy products:

- (1) Vitamins — a. Carotene; b. Thiamin Hydrochloride; c. Riboflavin; d. Niacin; e. Pantothenic Acid; f. Biotin; g. Inositol; h. Choline.
- (2) Minerals — a. Calcium; b. Phosphorus; c. Sodium; d. Potassium; e. Magnesium; f. Sulfur; g. Chlorine; h. Iron; i. Silicon; j. Copper; k. Manganese; l. Zinc.
- (3) Essential amino acids
- (4) Fat
- (5) Carbohydrates

Although we do not quite agree with the

"Ten Million Boosters for the Soybean"
COL. ROHLAND A. ISKER



claim that the soybean has a complete protein, we do believe that in combination with other cereal products the essential amino acids can be supplied.

Up to the present time, the principle use by the Army of soybean flour has been in our K Biscuits. The principal function underlying its use in this product is to provide as complete a non-meat protein as possible.

A Bright Future

We will be using soybeans in the Army in our pork link sausage. There are four reasons leading to our adoption of soy in this product:

- (1) It permits stretching of available meat supplies.
- (2) A saving is effected in connection with fat release.
- (3) From a nutritional standpoint the product is improved.
- (4) The cost to the Army is lowered.

Other possibilities for the use of soy in the Army rations are:

- a. Bakery goods
- b. Macaroni products.

The future looks very bright for soybeans as an edible food product. Millions of men will be introduced to soybeans through the Army, and the indications are favorable for adoption of soybean products in the national diet. Much progress has been accomplished; much work remains to be done; but I can't help but feel that among the new and beneficial changes that will be established in this country as a result of the concentrated scientific studies necessitated by this war, when we return to normal conditions soybeans will be an accepted constituent of the American dietary.

— s b d —

STRAYER IS LIASON OFFICER

George M. Strayer of Hudson, Iowa, has been designated liason officer of the American Soybean Association, it has been announced by David G. Wing of Mechanicsburg, Ohio, president of the organization. Wing states that Strayer will represent the soybean growers in meeting the problems of harvesting, storing, and marketing the unprecedented soybean crop.

The 1942 production will be double that of 1941, or 211 million bushels, and unless unusual vigilance is exercised, much of this vial crop can be lost, Wing declared.

He expressed confidence that Strayer would make an invaluable contribution to the war effort in this new capacity. "Mr. Strayer is a graduate of Iowa State College and is a pioneer in the growing of better seeds, particularly soybeans. He is an experienced grower and is in a position to fully realize the problems facing the soybean growers of this country in view of the present shortage of labor, materials and storage facilities. It was upon this basis that the American Soybean Association designated Mr. Strayer as liason officer to represent the soybean growers in cooperating with elevators, soybean processors and various governmental agencies concerned with conserving and fully utilizing the crop for the most aggressive pursuit of the war effort," explains Wing.

Strayer is the present secretary of the American Soybean Association and is well known throughout Iowa for his work in plant breeding and improved seed production.

*NOT Sold Up for Duration But
Sold 100% of Capacity for This Year*

New Production Goals for Next Spring for

Ruhm's Phosphate

The Best by All Tests
For SOYBEANS

Place Orders Now for Spring and Fall of '43.

Write

RUHM PHOSPHATE & CHEMICAL CO.
MT. PLEASANT, TENN. Since 1897

WOODSON-TENENT LABORATORIES

MEMPHIS, TENNESSEE and CAIRO, ILLINOIS

*Analysis of Soybeans
and Products*

Official Chemists for National Soybean Processors Association

BEFORE SELLING, PLEASE CONSULT

STERNE & SON CO.

"JUST BROKERS"

Oldest Handlers of Soyabean Oil

Direct to All Refiners

Board of Trade Building
CHICAGO, ILLINOIS

Telephone:
HARRISON 4797

Making the Public Protein-Minded

By DEAN H. J. REED

Director of Extension, Purdue University

I DO NOT believe any of us could have foreseen the very important part that soybeans must play in our life during a period of total war. The money that the federal and state governments have invested in plant research is now paying enormous dividends.

This institution, being located almost in the center of early soybean interest, has been conscious of the possibilities of soybean products as a livestock feed, and has been experimenting with them for more than twenty-five years.

As you know, the institution has been protein conscious for several decades, initiating early work using tankage for hogs and meatscraps for poultry. The Journal of Agricultural Research for January 2, 1920, records the first comparisons of meatscraps and soybean meal as a supplement to corn for growing chicks, a contribution from our Poultry Department. Professor Carrick and Doctor Hauge have continued this important work and have made many contributions to a scientific understanding of the effective use of soybean oilmeal. Professor Vestal and Doctor Shrewsbury have a long record of achievement on the use of soybeans in the nutrition program for hogs, and the same is true of Professor Hilton of the Dairy Department, in the use of protein from soybeans and soybean hay for dairy cows. This work and the work of many others has made it possible for us to better understand the proper use of the various amino acids in animal nutrition.

I wonder if we realize how much such work has contributed to the welfare of the nation and its people. Just think for a minute what a difficult situation we would be in now when our food producing facilities are being strained to the limit if years of scientific research on animal nutrition had not preceded this all-out war. We are called upon for the largest food output of all time, and the effective use of protein in supplementing the carbohydrates of the Corn Belt has become a national duty.

What has all this to do with making the public protein minded? For years our Extension workers have been talking about the value of a balanced diet for livestock. The results of the experimental work have been the basis for such teaching. Simultaneously McCollom and other scientists have been working on problems of human nutrition, and, after all, there is a close relationship between the problems of feeding the farm animal and the human.

The farm public was first to become protein minded because it was profitable to do so. Our workers in the Department of Animal Husbandry have shown that 100 pounds of tankage replaces 14.5 bushels of corn and speeds up the production of pork. Similar results have been secured regarding egg and milk production, and this makes education easier. Our Home Economics Extension workers have 51,000 farm women organized in rural home economics clubs, and for years they have been working on nutrition projects. Proper feeding of hens has made it easier to understand the use of cheese, eggs, etc., in the human diet, and the "food for health" projects have helped them understand proper animal nutrition. Today the nutrition campaigns are convincing more people of the value of proper combinations of foods, and this will help in the coming campaigns to use millions of tons of soybean oilmeal for food production.

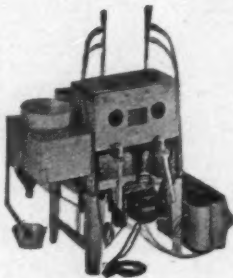
HEADQUARTERS FOR MOISTURE TESTING EQUIPMENT

For over 30 years we have been the largest distributors of grain testing equipment. We carry all of the standard makes of moisture testers including the Steinlite, Brown-Duvel and Tag-Heppenstall. Send for our 1942 catalog. Do not wait any longer. Place your order now.

TRIERS. SOYBEAN SIEVES. DOCKAGE SCALES.
BOERNER SAMPLERS. GERMINATORS SAMPLE PANS.

SEEDBURO EQUIPMENT COMPANY

(Seed Trade Reporting Bureau)



Brown-Duvel

629 Brooks Bldg.

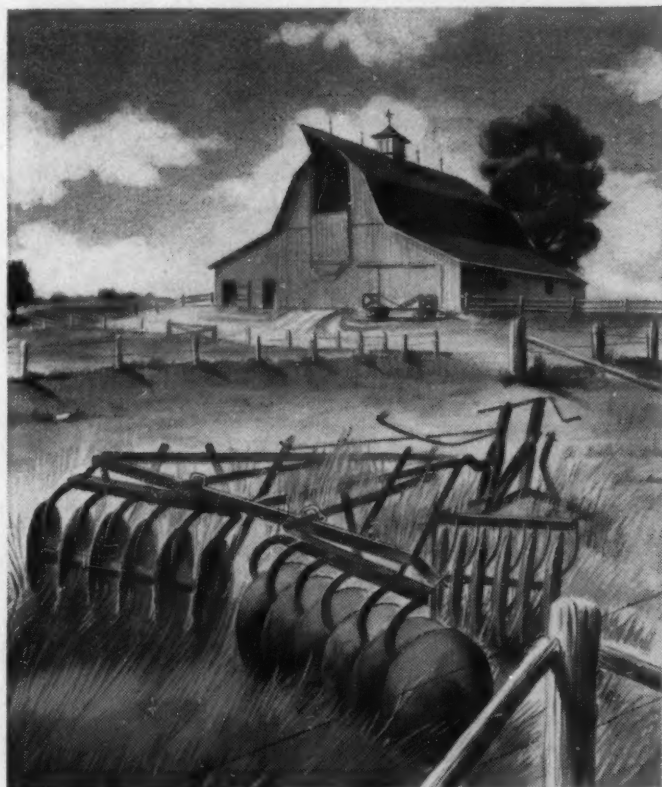
CHICAGO, ILL.



Steinlite



Light draft, good scouring with Raydex bases having sharp replaceable points. Raydex bases fit any Oliver tractor plow.



Uncle Sam needs scrap NOW to keep the mills going. Do your share! Sell your scrap to your junk dealer or call your Oliver dealer.

A SHARP PLOWSHARE IS A SWIFT SWORD!

● Sharp plowshares are swift swords for speeding Victory in the battle of Food for Freedom.

They save hours; they get the work done well and in time.

Take Raydex plows for example: If you've ever watched a Raydex base as it slices and turns the soil, acre after acre, you'll know what we mean by a sharp plowshare.

More than that, the replaceable points on Oliver Raydex bases actually sharpen themselves as they wear.

Today, when labor is scarce and help is hard to find, Raydex plows turn more soil in less time for less money. Sharpness—that's the reason.

Today, owners of Oliver Raydex plows are fortunate. For, though it may be difficult, in some territories, to buy a new plow, their Raydex plows will see them through the duration.

Remember, sturdy is the word for Oliver.

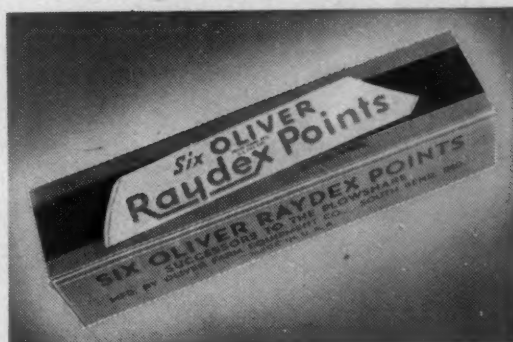
If you can't get the new tools you want—no matter what they are—perhaps your Oliver dealer can help you repair the old, or find used equipment that will see you through.

Use his store as an information center. If anyone can, he'll be able to help you get the equipment you need. Oliver Farm Equipment Co., 400 W. Madison Street, Chicago, Illinois.

STURDY

IS THE WORD FOR

OLIVER



Raydex points are available. Quantities are limited, so conserve those you have; buy only what you need.

Bumper Bean Crop in Prospect

PROSPECTS for the national soybean crop materially improved during August, according to the U. S. Department of Agriculture. The September 1 estimate is for a total of 211,452,000 bushels, as compared with the August 1 figure of 186,000,000. (Note: Our apologies are due for an error which crept into the August report, when the Illinois total was substituted for that of the nation.) Present estimated national acreage for harvest is 10,867,000.

While there are scattered reports from our correspondents of a combine shortage, the acute problem seems to be bean storage in many localities. This is especially true in sections where bean acreage has expanded very rapidly and where scant storage facilities exist. Local Triple-A committees are able to remedy this situation in some places by providing prefabricated bins. With the prospective overcrowding of processing plants and elevators it is time for the individual farmer to make sure he has adequate bin room.

ILLINOIS

Frank S. Garwood & Sons, Stonington, for Christian County: Crop 4 to 5 days late.

Many late beans may not get under frost deadline. Expected yield 90 percent of normal, with about 2 percent cut for hay. Farmers building considerable new storage. We are located near large mills and don't anticipate any difficulties. There will be enough combines.

Russell S. Davis, Clayton, for western: Crop 2 weeks late, with Sept. 1 condition 75 percent of normal. Many fields July planted and very weedy. 75 percent of normal yield expected. Very few to be cut for hay. Plenty of combines if harvest weather favorable. Very light small grain crop leaves plenty of bin room for present prospects.

Lee M. Gentry, chairman Illinois Agricultural Conservation Committee, Decatur: Apparently storage situation is not too serious if harvesting season normal. County Triple-A committees have brought in supply of wooden storage bins which can be sold to farmers if additional storage needed. With soybean mills situated at accessible points throughout heavy soybean area, we do not anticipate too much trouble.

IOWA

Francis Kutish, assistant extension agronomist, Iowa State College, Ames, for north: Crop 3 weeks late with Sept. 1 condition excellent except for lateness. Some beans slow in forming pods. Expected yield 75 percent of normal.

Charles R. Weber, agent, U.S.D.A., Bur. Plant Ind., Forage Crops and Diseases, Ames: Crop less than week behind normal maturity. Due to greater vegetative development than normal, lodging severe. Excellent podding

and filling conditions, which mean 15 to 20 percent above average yields. 15 percent to be cut for hay. Combines likely will suffice but there must be no delay when beans are mature. Farm storage in general sufficient except for scattered localities. Storage facilities other than farm bins present more serious situation than farm storage.

Leslie M. Carl, federal statistician, Des Moines: Indications that 2,017,000 acres of soybeans will be harvested and with estimated yield of 21.5 bu. the total production would be 43,366,000 bu., an increase of 161 percent over last year. The current year's production for Iowa alone well above 10-year (1930-39) average for nation. Beans generally well matured and heavily podded but relatively long period of favorable weather needed to realize harvest. Portion of acreage to be harvested 90 percent.

OHIO

W. G. Weigle, Van Wert, for northwest: Crop about 10 days late, with heavy foliage, rank growth, considerable lodging. Good set of beans in pods. Expect yield 90-95 percent of 25 bu. normal. Little to be cut for hay. Plenty of combines to harvest 40 percent increased acreage with normal harvest season. So much rain in August beans unusually green. Late planted fields probably caught by early frosts. Grain dealers think can handle all beans this fall. AAA bringing bins with total capacity of 75,000 bu. into Van Wert County, but only small fraction of our 1 1/4 million bushels. Farmers not enthusiastic about storing beans on farm with prospective price increase of only 7c per bushel.

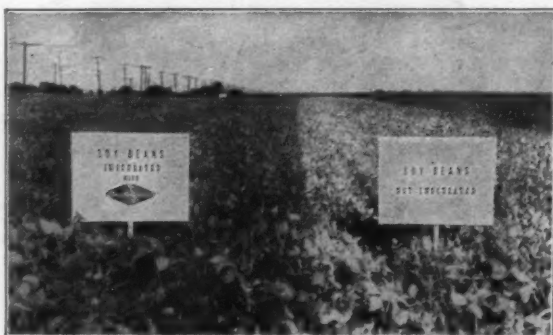
G. R. Shier, Ohio State University agricultural (Continued on page 21)

Soy Bean Growers VICTORY

Calls for

Increased Farm Production

Inoculating all your Legume crops will help to CONSERVE and INCREASE the nitrogen and active organic matter in your soil.



EFFECT OF INOCULATION ON SOY BEANS

Treatment	Yield	Pounds Protein per ton	
	Seed	Seed	Hay
Inoculated	46.6 bu.	705	316.2
Not Inoculated	34.7 bu.	621	292.4
Gain for Inoculation	11.9 bu.	84	23.8

(University of Illinois Bulletin No. 310)

REMEMBER: There are 70 million pounds of Nitrogen over every acre to draw upon if you inoculate; if you do not inoculate you rob your soil and fail to utilize this free source of nitrogen.

INOCULATE

All Legumes

with



A Proven Product

Containing Only Carefully Selected
Field Tested Superior Bacteria

Use Urbana Culture as a Protection
for your Legume Seeds and your Soil
in your Food-for-Defense Production

Prepared only by

THE URBANA LABORATORIES

406 North Lincoln Ave.
Urbana, Illinois



War-Time Way to Meet SOYBEAN EMERGENCY



Last year your soys were simply a crop you grew for reasons of good farming. They fitted well in your rotation. The green vines put nitrogen into your soil, or the ripe seed put cash in your pocket. This year your soys are one of the most critical crops, not merely for feed and food but for the actual materials and munitions of war.

Only by favorable weather, a long harvest season, and full use of every available combine can the soybean crop be saved. If you have a Case combine, let it work every hour that beans are fit to thresh until all the beans in your community are harvested. Your Case is built with extra stamina and durability, born of a hundred year's experience in building grain and seed saving machinery. Use that extra endurance now to help save your neighbors' crops and your country's freedom.

If you don't have a combine, ask some Case owner to

come in and harvest your beans. The extra threshing and separating capacity built into his combine is your best guarantee that he will get every possible bean and do a good job of cleaning. That extra capacity also helps him hustle his own harvest out of the way so he can tackle yours.

The good-neighbor way to repay him is by using your tractor and plow, drill, corn picker, manure spreader or hammer mill to do an equal value of work on his farm. If you don't know the fair price for use of machines, ask your county agent or the agricultural engineering department at your state college.

Your Case dealer stands ready to serve you, too. He knows who have combines, who need to hire combining done. He can show you the fine points of adjusting and operating machines. Use his service to maintain your equipment in first-class shape. If you need renewal parts, order them weeks earlier than usual to avoid war-time delays in transportation. Remember, this is a war-of machines, and you are a fighter on the food front. J. I. Case Co., Racine, Wis.



1842
CASE
Centennial
Jubilee
1942

CASE.

SPEED THE DAY OF VICTORY ★ BUY WAR BONDS TODAY

Miller's Soya Products

The International Nutrition Laboratory are pioneers in soya bean processing of the choice edible varieties and of soya protein utilization in the human dietary. Our distinctive achievements are:

1. Flavor improvement
2. Ready digestibility
3. High protein yield
4. Lower cost of man's **protein** dietary requirements

Send for catalogue of Miller's tasty soya foods including soya milk, liquid and powdered, delicious green soya beans, soya meat substitutes, such as Miller's savory vegetable cutlets, soya loaf, sandwich spread and soya cheese.

Processed and Packed by the
**INTERNATIONAL NUTRITION
LABORATORY**
MT. VERNON OHIO

WORLD NUTRITION

(Continued from page 9)

be accepted too literally, they become a guide around which to plan production goals that will keep a given number of people nutritionally well fed.

In wartime, uncertainty is the greatest factor entering into a people's food economy. In the present war we have already found it necessary to make certain shifts in the kinds of food shipped to our allies. These shifts, or consumer adjustments, have been wished on us by the fortunes of war. Right now there is a great deal of interest in how impending adjustments in meat supplies may affect the American diet. In the face of meat rationing we shall need reliable scientific information on protein supplies. There is, for instance, some talk about mixing soybean products with enriched white flour in some of the protein-deficiency areas. How far we can go in this direction must necessarily be left to the impartial bodies of science. This much is sure, the policy to be followed in making necessary wartime allotments and adjustments in the distribution of foods — by groups, by regions, by countries — will emphasize nutritional quality.

Food Habits, Food Processing, and Nutrition

Although we are just beginning to make important researches and surveys on the influence which food habits, custom, economic and sociological factors exert on the nutritional welfare of people, valuable information is already at hand.

An illustration of the trend in some of our food habits was given in the August issue of the Dairy World by Henry T. Scott, Director of Biological Research of the Wisconsin Alumni Research Foundation, Madison. In discussing the scientific basis of the need for Vitamin B₁ in human metabolism, Dr. Scott writes:

"... You may wonder why during the past few years we have become so conscious of all these things when our forebears, apparently through ignorance, worried not.

"The answer is obvious: Our food habits and mode of living have changed with the times; in the Plymouth Colony, the yearly consumption of sugar was 5 pounds per capita. In other words, it was a luxury. Today it is far from a

(Continued on page 20)

SOYBEANS-WHAT NOW?

NOW we know that we can offer you the right type of products to give our soldiers, as well as the civilian population, a vital requirement for a balanced diet.

The Nutritionists in our laboratories are cooperating to the fullest extent with both the Governmental agencies and with the manufacturers of food products for civilian use.

We now have a diversified line of edible soya products to fit into many types of finished food products.

We maintain our nutritional laboratories to help you with your problems.

THE GLIDDEN COMPANY
Soya Products Division

5165 West Moffat Street

CHICAGO, ILLINOIS

Originators of Unusual Products From the Soybean

New Parity for Beans?

The Chicago Board of Trade has asked the U. S. Department of Agriculture for a new parity price for soybeans, based directly on corn instead of the 1934-39 period.

The Board objects that soybean prices during the period used by the Bureau of Agricultural Economics in computing soybean parity were low as compared to prices for other crops. The Board's recommendations were made before the U. S. D. A. hearing in St. Louis August 24 to consider comparable prices for soybeans and other agricultural crops.

The soybean base price found by the B. A. E. is \$.95, while the comparable price of August 15 was \$1.44 per bushel. The Board of Trade contends that the maximum price that can be paid farmers for beans under the Emergency Price Control Act is \$1.58, or 2c under that set by the Secretary of Agriculture. It recommends a base price of 118.4, a comparable price as of August 15, of \$1.80.

"Better than any price series . . . constructed with respect to the recent years 1934 to 1939, is the comparable base already established by Congress with respect to corn parity because of the interchangeability of the two crops in land use in the great producing states," suggests the Board.

"Cost of production of soybeans is slightly less than cost of production of corn due to the fact that one less tillage is required. Otherwise, the same farm labor, the same farm investment, the same marketing facilities are used for each of the two crops.

"In Illinois the state average production per acre is approximately 20 bushels of soybeans or 40 bushels of corn. . . . A fair comparable price with respect to the purchasing power of the commodity would be slightly less than twice the purchasing power of corn.

"Taking into account soil depletion and one less tillage per crop and the greater hazard in the harvesting of the soybeans due to shattering, it is our recommendation that the comparable base price of soybeans based upon the announced comparable base price for corn for the years 1909 to 1914 (64.2c per bushel) be 118.4 per bushel, thus making allowance of \$2.50 per acre difference in cost of tilling. The United States Department of Agriculture in its release August 28, 1942, indicated that based upon corn price of 64.2c per bushel in the base period, August 1909 to July 1914, they had arrived at a parity price of 97.6c August 15, 1942. The corn parity of August 15, 1942 of 97.6 per bushel was arrived at by using a price series determined by the Secretary of Agriculture under the requirements set by the Agricultural Adjustment Act of 1938. The base price of corn of 64.2 in the period August 1909 to July 1914 as compared to the parity price August 15, 1942 of 97.6c per bushel, shows an increase with respect to corn of 152 per cent. Therefore, if we assume a comparable price for soybeans based upon corn in accordance with the preceding argument, we will have a parity or comparable price for soybeans of 118.4 times 152 per cent or \$1.7996 as a parity for soybeans on August 15, 1942."

A total of 379 carlots of soybeans were inspected during the period August 1-15. These included: Illinois 273, Ohio 38, Iowa 31, Indiana 26, and Missouri 11.

— s b d —

Activity in the futures markets for most agricultural commodities declined in July compared with the previous month, and there was considerable liquidation in contracts for future delivery of processed commodities, according to the month-end statement from the U. S. Department of Agriculture. Trading in soybeans was sharply reduced from June levels.

Total receipts of soybeans in carlots at markets inspected under the grain standards act in the five leading soybean states were 1242 during the period July 16-31.

Inspections include Illinois 572, Ohio 70, Indiana 68, Iowa 21, and Missouri 14.

— s b d —

Prehn's Health Food Store are now serving their customers in a new location. They announce a change of address from 700 S. Goodwin, Urbana, Ill., to 504 S. Neil Street, in the neighboring city of Champaign, Ill. The firm's name also has been changed, to Prehn-Cochran Health Food Store.

The Package that Keeps Goods Coming. . . .



A SHORTAGE of packaging materials has interrupted delivery of many merchandise items. But it hasn't stopped LEGUME-AID — the inoculant that comes in the CARTON package which has proved so popular with the trade for the past four years. Today, when the need for inoculants is greater than ever before — LEGUME-AID is on the job in any quantities desired — just as reliable, just as efficient, just as satisfying to farmers and dealers as it always was before war created such peculiar business problems. Get full particulars from your jobber, or write us direct.

AGRICULTURAL LABORATORIES, Inc.

Columbus, Ohio



LEGUME-AID

OIL CHEMISTS AT CHICAGO

The annual fall meeting of The American Oil Chemists' Society is scheduled for October 7th, 8th and 9th at the Drake Hotel in Chicago. This is the second successive Fall Meeting being held at the Drake.

In spite of war conditions and the stress of the times, an interesting and instructive meeting is in prospect. The scientific and technical program, while not complete at this time, gives indication of measuring up well with previous programs.

One or more sessions of the convention will be devoted to papers on fats and oils, an incomplete list of which follows:

1. "The Preparation of Fat Soluble Mono-Esters of L-Ascorbic and d Isoascorbic Acids"

— D. T. Swern, Eastern Regional Research Laboratory.

2. "The Use of Fatty Acid Mono-Esters of L-Ascorbic and d Isoascorbic Acids as Antioxidants for Animal Fats and Oils" — R. W. Riemenschneider, Eastern Regional Research Laboratory.

3. "Ultraviolet Absorption Studies of Vegetable Oils" — J. P. Kass, Northern Regional Research Laboratory.

4. "The Saturated Acids of Japan Wax" — H. A. Schuette and R. M. Christensen, University of Wisconsin.

5. "The Wigs Iodine No. Determination of Tall Oil" — R. H. Hastings, West Virginia Pulp and Paper Company.

6. "A Nomograph for Emergent Stem Correction of Mercury-in-Glass Thermometers" — J. G. Kane and H. A. Schuette, University of Wisconsin.

Another section of the program will be devoted to soap and soap products. Papers by research men representing the Colgate-Palmolive-

Peet Corporation, Lever Brothers Company, Swift & Company, and Refining, Inc., have been scheduled.

A group of industrial exhibits, a usual feature of the convention, will be on display again this year.

— s b d —

22ND A. S. A. CONVENTION

(Continued from page 6)

RESOLUTIONS

We, the delegates to the 22nd annual convention of the American Soybean Association in meeting assembled, do hereby resolve that:

(1) Due to our nation's being attacked and now engaged in war, all of which has happened since our last annual meeting, soybeans have assumed a vital place in our war economy. We highly commend our grower members for the prompt and efficient response in meeting our nation's appeal for increased production.

(2) We further commend the grain and feed trade, the processors and the United States Department of Agriculture for the valuable contributions that each and every one have made to the tremendous undertaking in making America paramount as the food factory of the world.

(3) We further commend the Regional Soybean Industrial Products Laboratory, college experiment stations and state departments of agriculture to whom we look for leadership in greater efficiency in soybean production.

(4) We thank the faculty and staff of Purdue University, all the officers and others who contributed time and effort in making this an outstanding meeting in point of interest, information and value to the soybean industry. We thank the Purdue University for the kind hospitality shown us during our meetings.

(5) We pledge our continued support to every agency that contributes to the early termination of the war and the defeat of the axis.

(6) We wish to thank our secretary, Mr. George M. Strayer, for his untiring efforts in promoting the interests of our organization and in fathering *The Soybean Digest*, the only periodical devoted exclusively to the interest of the soybean industry.

(7) We recommend the continued collaborating of our legislative committee with the dairy interests and vegetable oil industry on working for increased production of fats. We recommend continuing and increasing the educational work already done showing the value of soybean oilmeal as a high protein feed for increased production of meat and animal products.

(8) We regret the passing of two of our former active members, namely, B. S. Strayer and Frank Goodwine, during the past year and hereby recommend that the secretary be instructed to express to the respective families the appreciation of the American Soybean Association for services rendered in behalf of the industry in past years.

(9) We also recommend that the secretary be instructed to express to John T. Smith our hopes for a speedy recovery, and our regrets that he is unable to be with us at the 22nd annual convention.

Respectfully submitted,

Howard Roach, Chairman
Plainfield, Iowa
John Gray, L. S. U.
Baton Rouge, La.
J. E. Johnson
Champaign, Ill.

KELLOGG'S
Old Process
Soybean
Oil Meal

**43%
PROTEIN**

**GOOD RATIONS
are a part of Victory**

● Your formulas are ammunition. The nation is counting on the cattle feeding program to play an important part in Victory. You can use Spencer Kellogg's old process Soybean Oil Meal to advantage in your feed formulas. For more than a year

it has been giving feed producers more than 43% protein, while only carrying a 41% minimum guarantee. Favorite of producers of quality feeds, it reflects the high standards of Spencer Kellogg's nationally famous research.



SPENCER KELLOGG AND SONS, INC.

SALES OFFICES: Buffalo, Chicago, Decatur, Ill.,
Des Moines, Minneapolis, Los Angeles.

MILLS: Buffalo, Chicago, Decatur, Ill., Des Moines,
Minneapolis, Edgewater, N. J., Los Angeles.



HURRY the HARVEST

and HELP UNCLE SAM!

Your soy beans will help to win the war! The crop you harvest this year is vitally needed, and every day you can save in getting it to the mill will aid Uncle Sam at a time when even minutes are precious.

If you own a Farmall Tractor and a McCormick-Deering Combine there should be no delay in getting the beans where they'll do the most good. This combination gets all the beans with a minimum of cracking, in the fastest possible time.

Now is the time to do some checking on your equipment. If you need parts for the combine or some service on your tractor . . . see the nearby International Harvester dealer. He has a complete stock of Genuine IHC Parts and his service facilities enable him to do expert work at reasonable cost.

Remember . . . when you finish with your crop, see if you can help your neighbor with his!

INTERNATIONAL HARVESTER COMPANY

180 NORTH MICHIGAN AVENUE

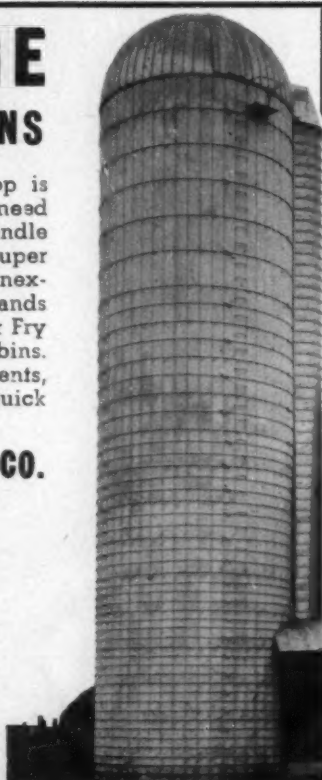
CHICAGO, ILLINOIS

INTERNATIONAL HARVESTER

STORAGE FOR SOYBEANS

The coming major crop is soybeans... and you'll need storage capacity to handle it. Erect Neff & Fry super concrete stave bins... inexpensive, strong, thousands in service. Also Neff & Fry monolithic storage bins. Capacity, compartments, housings as required. Quick erection.

THE NEFF & FRY CO.
CAMDEN, OHIO



**NEFF & FRY
SILOS**

Sole Manufacturers
Patented

NU-SEME BURLAP AND COTTON BAGS

The best substitute for new bags.

Also good quality second-hand bags.

ALWAYS

a good source of supply for bags.

During the war and
After the war

**QUALITY AND
SERVICE**

WESTERN BURLAP BAG CO., Inc.
1109-21 West 38th St. CHICAGO, ILL.



WORLD NUTRITION

(Continued from page 16)

luxury, and the yearly per capita consumption has risen to 112 pounds. In the earlier years, thiamin was more prevalent due to less refinement in food processing and milling."

Here is an example of the part food habits have played and are playing in nutrition. Their effect on the health and well-being of people is considerable. We recognize that neither improvement in milling nor processing methods were built on nutritional need. Many of the earlier developments, in fact, contributed to the nutritional deterioration experienced for several generations. Mills furnished the snow-white patented flour because people liked it. The whiter and fluffier, the greater the demand. Yet folks were ignorant as to the way that changing food habits tended to deprive them and their children of the very substance that made their ancestors vigorous and physically hardy. In the future, nutritional quality will outweigh in importance such minor attractions as appearance, color, packaging, and the like.

Nutritional Qualities of Soybeans

The trends in agricultural technology and nutrition that I have discussed must be kept in the background of our thinking when we consider the future of any farm crop, like soybeans, or the place it is likely to occupy in advancing world nutrition. Mankind has emerged from centuries of farming by tradition, and from generations of eating by habit and custom, to a period where, if present populations are to be adequately fed, scientific calculations and methods must be allowed to determine our national and international food policies.

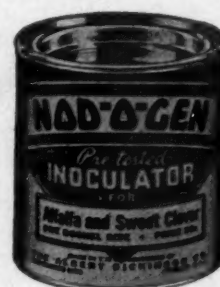
Since I am neither a nutritionist nor a food chemist or technologist, and since your official records and the scientific reports of research workers already contain ample information of the nutritional qualities of soybeans, I shall refrain from going into the purely scientific phases.

Soybeans yield a greater quantity of available protein than any other vegetable plant. Soy products also contain substantial amounts of vitamins of the B complex. Though we recognize that the quantity of these B vitamins is not sufficient in itself to fulfill human requirements in the ordinary servings, these vitamins

(Continued on page 22)

Check NOD-O-GEN in the Field

Fall is a good time to check the value of inoculating legumes with NOD-O-GEN... particularly such a crop as soybeans. We invite you to investigate the field performance of NOD-O-GEN by any method you consider adequate. This has been NOD-O-GEN's biggest year.



Inoculator Division

THE ALBERT DICKINSON CO.

Chicago, Ill.

Est. 1854

NOD-O-GEN
The Pre-tested Inoculator

September Crop Report

(Continued from page 14)

tural engineer, Columbus: Bean harvesting problem especially acute in northwestern Ohio where in 19 counties bean acreage this year exceeds wheat acreage.

D. F. Beard, extension agronomist, and R. D. Lewis, chairman department agronomy, Ohio State University, Columbus: Crop averages 1 week to 10 days late, with growth and condition of plants good, but dry, warm weather badly needed to mature. Expected yield 8 to 10 percent above normal if crop can be matured, with 18 percent cut for hay. Combines have big job ahead with some counties 200 acres or more per combine. Rank growth and severe lodging in many areas will slow maturity, make harvesting difficult.

Elmer F. Kruse, chairman, Ohio Agricultural Conservation Committee, Columbus: It would seem that we will have storage facilities on farms to care for at least one-third of crop. We are in process of erecting wooden and steel bins to store at least 3 million bushels. We anticipate total crop of 21 or 22 million bushels.

MICHIGAN

Michigan Agricultural Conservation Committee, Lansing: It is believed adequate storage available if harvested soybeans do not contain excessive moisture. Biggest problem is getting crop dry enough for farm and warehouse storage due to lack of drying facilities. Average moisture content of all beans tested in 1942 was 16 percent. If present weather conditions continue, necessary to ship entire crop to processing plants soon after harvest.

MINNESOTA

John W. Evans, Montevideo: Soybeans have made heavy growth throughout much of west central Minnesota. Earlier maturing varieties and especially those planted in May forming pods, later varieties and later planting still in blossom. I have Illini beans 4½ feet in height. Manchu remain most popular variety with Mukden possibly second. Some Habaros planted and considerable interest in Richland this year. In this section bigger increase in flax than soybeans. However, if crop matures there will be beans looking for processing market. Enough combines in this area.

W. G. Green, Lakesfield, Minn., for southwest: Crop 14 to 20 days late, with Sept. 1 condition very good. Expected yield 10 to 15 percent above normal with amount to be cut for hay depending on frost conditions. Some very good fields in this territory. Richland, Wisc. No. 3 and Wisc. 600 all stand up in good shape and will outyield all other varieties. McClave no good, down badly, no seed and very late.

Chas. W. Stickney, chairman Minnesota Agricultural Conservation Committee, St. Paul: Crop not yet matured enough for accurate estimate of amount of beans harvested for grain. Approaching time when first killing frost hits area, so considerable uncertainty as to amount of beans to mature before frost. Since we have considerable storage space available in area where most beans grown, we do not expect much difficulty in storage.

Farmers Seed & Nursery Co., Faribault, for south and central: Crop 2 weeks late with pods just forming. Yield 25 percent above normal if beans mature, 25 to 30 percent to be cut for hay. Perhaps not enough combines to handle crop at proper time. Local storage not sufficient.

MISSOURI

J. Ross Fleetwood, extension specialist field crops, Columbia: Crop maturity normal with Sept. 1 condition good. Expected yield 20 percent above normal, with approximately 40 percent to be cut for hay. Enough combines to handle crop but storage somewhat of problem, but not too serious, we think now.

Missouri Agricultural Conservation Committee, Columbia: Estimates by county Triple-A committees place Missouri's total bean crop at 7,913,843 bushels and estimate that storage space for 1,951,000 bushels will be needed in addition to that already available. Great shortage of bin space apparent in bottom-land

counties along east and west borders. Dunkin, for instance, is growing 800,000 bushels, needs additional storage space for 500,000. Knox, with 300,000 bushels, has steel bins for 21,750 and no other space available.

MISSISSIPPI

J. M. Weeks, extension agronomist, State College: Crop a week late. Sept. 1 condition fair to good, with expected yield 85 percent of normal. 65 to 75 percent will be cut for hay. Apparently a sufficient number of combines in state to harvest beans, but some areas short.

NEBRASKA

Pete Mazz Soy Bean Mills, Fremont: Crop 10 days late, with excessive moisture. Sept. 1 condition 95 percent of normal. Yield expected is 15 to 18 percent better than normal, with between 3 and 5 percent cut for hay. No shortage of combines. Storage will be difficult.

(Continued on page 24)

4 GOOD REASONS



Swift & Company's four soybean mills are conveniently located for producers all over the midwest area. You'll find them easy to reach and both pleasant and practical to use throughout the year, as outlets for the soybeans you raise. Plan to visit the one nearest you. You'll like the friendly welcome that awaits you.



Prehn's Health Food Store

announces the new firm of

PREHN-COCHRAN HEALTH FOOD STORE

and its location, where your needs can be served
more completely, at

**504 South Neil Street
CHAMPAIGN, ILLINOIS**

Telephone: 5929

"The Home of the University of Illinois,
Right in the Heart of the Soybean Belt."

For September we feature:

**5 lbs. Superior Soy Flour
79¢**

(A rich source of the anti-gray hair factor)

Write for complete price list of health foods.

PREHN-COCHRAN HEALTH FOOD STORE

"We Are in Business for Your Health"

Soybean Financing



WILLIAM H. BANKS WAREHOUSES, Inc., warehouse receipts on soybeans, oilmeal, and soybean oil, stored on your own premises, furnish you with needed working capital. Financing by means of field warehousing has been the accepted practice in the soybean industry for many years.

Wire or write or phone us today for full details and descriptive booklet.

**WILLIAM H. BANKS
WAREHOUSES, INC.**

BONDED FIELD WAREHOUSEMAN
209 So. La Salle Street . Chicago, Ill.

WORLD NUTRITION

(Continued from page 20)

nevertheless can be made to take a part in building up diets deficient in this sense. Since these facts seem to have been established by our scientific people, those responsible for the Nation's nutritional welfare are naturally looking to soybeans to help in making up protein deficiencies when they occur as a result of low income, food shortages, or because of adjustments in consumer supplies of protein foods.

The comparative low cost of soy products makes them an ideal source of protein in rounding out protein deficiencies where they are known to exist generally. This will be an important point with regard to post-war feeding among the low-income groups in this country and especially among the people to be fed abroad. Low cost of soybean products should provide a permanent spot in the mass feeding of people. This should hold true even long after the post-war period, when we shall be called upon to help in rehabilitating millions of malnourished populations over practically all of the world.

Importance of Milled Products From Soybeans

Besides this increasing usefulness of edible soybeans in supplementing the diet with protein, milled products from soybeans are destined to have an increasing importance. Recent developments in the processing of soybean flour, flakes, and grits make it possible to lose trace entirely of the raw or beany flavor. The nutritional efficiency of soys processed under the newer methods can be as high as 80 to 90 percent both in man and in livestock. Such a development seems to be of considerable practical importance.

Right here, I believe, lies a great opportunity for the food industry to make a wartime contribution to nutrition. Many foods can be prepared that contain processed soy flours, grits, or flakes. These products can be mixed with wheat flours in bakery goods and noodles, used in soups, and blended with cereals, to provide more protein in diets where needed. These soy products also can be mixed with meats in sausage, loaf, and other palatable products.

Take the matter of breakfast cereals for instance. The Agricultural Marketing Administration tells me that several of the large breakfast-cereal manufacturers are putting out cereals mixed with soy flakes or grits. In a way, these new products are experimental. They are being used now principally under our Lend-Lease program for export to Russia and other allied countries. This combination of other cereals with about 20 percent soybean flakes or grits, plus dry skim milk, sugar, and salt requires only the addition of water to furnish a much higher protein supply than the ordinary breakfast cereal. The product may need changing in some respects before it is placed in general retail distribution. I hope that such a product, or something similar to it, will be on the shelves of American retail stores before winter is over.

Industry Education

Soybean flour and grits are being purchased now in large quantities for shipment to Great Britain. The British, knowing the nutritional value of these products, are using them in wartime feeding in bakery products, meat products, ice creams, and various other foods. They are buying pork and soya links in large quantities, and from all reports are very fond of this item. The extent to which soybeans and soybean products can be put to use in similar ways here at home will depend on the degree of cooperation that can be worked out by the different food industries concerned.

In view of the recent processing developments I have cited, it would not seem too early for the soybean industry, as represented by your association, to enlarge its services to other food concerns by making careful surveys of present uses of soybeans in the human diet; of quantities used in various edible products containing soybean grits, flakes, or flour; and of the quantities that could be made available as the need increases under rationing of other high protein foods.

It is important in any subject dealing with nutrition that we take into account the whole field of nutritional knowledge. I say this because any group whose interest in nutrition may be focused from a particular standpoint must guard against unduly extolling the nutritional virtues of a particular brand or commodity. If we are to attain for all people the human standard of food sufficiency implied in the third of the four great freedoms, there will be plenty of need and a demand for all the proteins that our combined agricultural resources and food industries can contribute.



FACTS

from the specialists

U.S.D.A. specialists are encouraging increased production of soybean oil meal. A direct quotation (March 1942) reads: "The protein content of United States feeding rations is still too low to give the most efficient production of livestock products."



The Staley Customer NEVER GUESSES He Knows!

There is no excess of protein concentrates in our country today. Neither is there any excess of feed grains. And there won't be an excess of proteins or grains in 1942-43 — even with good crops.

The proper use of protein concentrates is good patriotism — and good economics. Based on records of performance, the liberal use of Staley's Soybean Oil Meal offers you a real opportunity to contribute to America's Food and Victory Program.

FEED DIVISION

DECATUR, ILLINOIS

A. E. STALEY MFG. COMPANY

PAINESVILLE, OHIO

SEPTEMBER, 1942

23

CONTRACT TO OIL REFINERS

The Department of Agriculture has announced the terms of a contract being offered to refiners of cottonseed, peanut, and soybean oils by the Commodity Credit Corporation. The contract is part of an overall program authorized by President Roosevelt to facilitate the processing of this year's record oil crops. It protects prices to farmers and preserves the price ceilings of the Office of Price Administration.

The contract provides for the purchase of crude oil by refiners at specified prices to participating crushers, the sale of this oil to the CCC at the same prices, and the resale of the oil by CCC to refiners at a reduction of $\frac{1}{2}$ ¢ a pound. Prices to be paid by refiners for crude oil are:

Crude soybean oil:

At Midwestern and Southern mills, 11 $\frac{1}{2}$ ¢ per lb. f.o.b. mill

At mills in Mich., Ohio, Va., N. C., and north and east thereof, 11-7/8¢ per lb. f.o.b. mill

At mills in Calif., Ore., and Wash., 12 $\frac{1}{2}$ ¢ per lb. f.o.b. mill

The contract provides for the optional pur-

chase of refined oil by the CCC at the base crude price plus specified refining costs, freight, and loading.

— s b d —

SEPTEMBER CROP REPORT

(Continued from page 21)

KANSAS

E. A. Ceavinger, extension agronomist, Kansas State College, Manhattan, for southeast and east: Crop maturity 95 per cent of normal. Sept. 1 condition for 75 percent of fields far above normal, with rest poor. Expected yield 105 to 115 percent of normal, with 3 to 5 percent cut for hay. It looks like there will be a lack of sufficient storage. Moisture and maturing conditions o.k. now, but wet, rainy weather could easily cause serious problem in proper storage.

Kansas State Crop Report: Soybeans making satisfactory growth and maturing in some areas. Good set of beans reported in early fields.

WISCONSIN

Geo. Briggs, extension agronomist, University of Wisconsin, Madison: Crop maturity 95 percent of normal in southern Wisconsin, 60 to 80 percent elsewhere. Nearly normal yield expected, with 15 to 40 percent cut for hay, depending on percentage that ripens for seed. Combines seem to be plentiful for most areas. Extra vine growth because of unusual growing conditions in late June and early July. Late planted soys may disappoint due to bad weather.

RHODE ISLAND

R. S. Shaw, extension agronomist, Kingston:

Soybeans grown for hay and silage only in Rhode Island. Most of crop harvested, with yield 110 percent of normal.

VIRGINIA

W. H. Byrne, agronomist, Blacksburg: Maturity perhaps later than normal. Sept. 1 condition good in some sections, fair to poor in others due to drought. Yield expected 90 percent of normal, with 20 to 25 percent cut for hay. Apparently sufficient combines available, but shortage of storage.

WEST VIRGINIA

R. J. Friant, extension agronomist, Morgantown: Crop 10 days late, with expected yield 110 percent of normal. 99 percent cut for hay.

MARYLAND

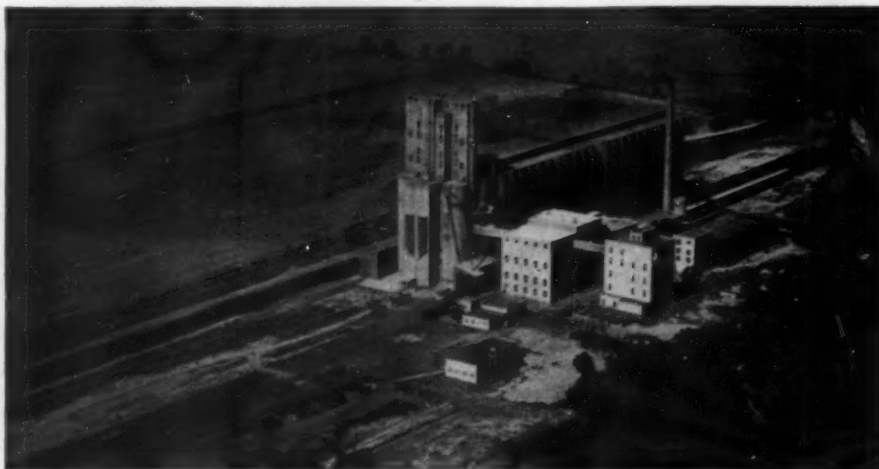
Albin O. Kuhn, assistant extension agronomist, College Park: Crop normal with Sept. 1 condition good. Expected hay yield 120 percent, bean yield 85 percent, with 55 percent cut for hay. Sufficient combines unless season unfavorable. Farmers have not been storing soybeans, so not well equipped to do this job. I expect soybeans in Maryland will not be stored under best conditions, with some consequent loss.

CONNECTICUT

J. S. Owens, University of Connecticut, Storrs: Sept. 1 condition excellent with almost 100 percent cut for hay.

PENNSYLVANIA

L. H. Wiland, Agricultural statistician: Maturity normal with Sept. 1 condition 90 percent. Expected yield 125 percent of normal with half cut for hay. Storage and combining not a problem.



A. D. M. Soybean Processing Plant . . Located at Decatur, Illinois.

Other Soybean Processing
Plants Strategically
Located at:

CHICAGO
TOLEDO
MILWAUKEE
MINNEAPOLIS
BUFFALO

The Mark of



Quality Soybean Products

WHAT IS GOOD-WILL?

Good-Will is the disposition of a satisfied customer to return to the place where he has been well treated.

The Archer and Daniels families have been engaged in the Oil Milling business for a century (1840-1940), and the good-will which has been built up during those hundred years is jealously guarded in every transaction.

ARCHER - DANIELS - MIDLAND COMPANY
MINNEAPOLIS, MINN.

VOLUNTEER TODAY!



Enlist as a Wayne Victory Dealer!

AMERICA needs you to help farmers produce more food and better food **FASTER**. Do your part by enlisting today in the Wayne "Food for Victory" offensive—a hard hitting, patriotic campaign that rewards you handsomely for showing your customers the fast, profitable way to produce more meat, more milk, more eggs for Victory.

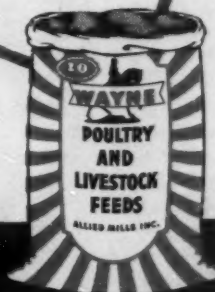
**WRITE TODAY FOR
COMPLETE INFORMATION**

**IT PAYS TO FEED and SELL
WAYNE**

ALLIED MILLS, INC.

EXECUTIVE OFFICES, CHICAGO
SERVICE DEPT., FORT WAYNE, IND.

Soybean Plants Peoria, Ill., Omaha, Nebr., Portsmouth, Va., Taylorville, Ill.



PROTEIN

FOR YOUR

HOGS and CATTLE

FROM THE

SOYBEANS YOU RAISE

USE DANNEN'S SOYBEAN OIL MEAL to replace the expensive animal proteins in your HOG rations.

FEED DANNEN'S MIN-SOY CATTLE PELLETS in bunks or on range to your CATTLE.

DANNEN GRAIN & MILLING CO.

ST. JOSEPH, MISSOURI



PROTEINS IN FLOURS

(Continued from page 10)

of peanut flour to 10 percent and to 15 percent increased the values to 44 and 48 grams, respectively. Addition of cottonseed flour gave results quite close to those obtained with the corresponding proportions of peanut flour. Soybean flour, on the other hand, gave quite superior values. The mixtures containing 5 parts of soybean flour showed a growth value somewhat greater than that of whole wheat, while those containing 10 and 15 parts supported growth gains nearly four and five times that obtained with patent flour alone.

The increasing weight gains obtained with increasing proportions of the oil-seed flours added to the patent flour indicate definitely that the oil-seed proteins supply one or more nutritionally-essential amino acids that are not present in sufficient amounts in the wheat flour proteins. There can be little or no doubt that one of these amino acids is *lysine*. Most of the protein of wheat flour is contained in the gluten. Gluten contains only about 2 percent of lysine.

Now, how about the oil-seeds as a source of lysine? The proteins of cottonseed and peanuts contain about 4 and 5 percent of lysine, respectively. Glycinin, a protein fraction that represents most of the total protein of the soybean contains 9 percent, a content that is exceeded by few food proteins. No wonder, then, that 10 parts of peanut flour or of cottonseed will more than double the growth-promoting value of white flour, and that the same proportion of soybean flour will increase the value almost four-fold.

Lysine is only one of the ten nutritionally-essential amino acid components of proteins. Although it is the chief limiting amino acid in the proteins of patent flour, there are probably other amino acids that enter into the picture. Some of the results shown in the table suggest that such is the case.

The results of the studies here outlined indicate that the use of soybean, peanut, and cottonseed flours offers one of the most effective, economical, and practical ways of meeting the world shortage of protein foods that seems imminent, and that this may best be accomplished by their use in conjunction with wheat flour. This country has an abundance of wheat, and wheat flour is one of the most extensively used foods. It is economical and can be used in an almost unlimited variety of ways. Bread made of a mixture of white wheat flour and 10 to 15 parts of soybean or peanut flours is scarcely distinguishable in taste or appearance from bread made of white flour alone.

No matter how many vitamins or how many mineral elements may be supplied in the diet, satisfactory growth will not result if any one of the ten nutritionally-essential amino acids be lacking. Wide publicity is being given to so-called "enriched" flour as a great development in improving the nutritive value of wheat flour. The enrichment consists in the addition of two vitamins (thiamine and niacin) and one mineral element (iron). The product is still as deficient in protein value as it was before enrichment. The results of our experiments show that, even after enrichment with eight vitamins and twelve mineral elements, the growth-promoting value of white flour can be still increased two-fold by protein supplementation with 10 parts of peanut or cottonseed flours, and four-fold with soybean flour.

RALSTON PURINA CO.

EXTENDS greetings to soybean growers and handlers who attended the Annual Meeting of the American Soybean Association, September 15-16-17, at Lafayette, Indiana.



When you are at home
visit any of our plants at

St. Louis, Mo., LaFayette, Ind., Circleville, Ohio, Iowa Falls, Ia.

Helpful Hints

on Soybean Harvest



John Deere Soybean Equipment

for better work..at lower cost

THE largest crop of soybeans ever grown in the United States is about to be harvested. And the part it plays in this national emergency will depend largely on the efficiency and care with which it is harvested. The following suggestions on soybean combine harvesting are fundamental in saving the maximum of beans with a minimum of cracking.

Don't attempt to combine soybeans until they are fully ripe. They are usually in best condition to thresh after the first good frost. To grade No. 1, soybeans must have less than 13% moisture content.

Be sure you have ample power to keep the combine operating at proper speed in all field and crop conditions.

Cut as low as necessary to save leaning stalks and low-growing pods. A bar cutting $4\frac{1}{2}$ inches from the ground leaves nearly 5% of the beans in the field, when cutting $5\frac{1}{2}$ inches from the ground, it misses 8% of the beans, and when cutting $8\frac{1}{2}$ inches, a loss of nearly 11% is suffered.

Keep the sickle sharp and the guards in proper relation to bar for clean cutting. Ragged cutting means lost beans.

In badly down and tangled beans, pickup guards may help save the crop.

Soybeans are easy to thresh but crack easily. Cylinder speed and concave spacing should be carefully adjusted according to the recommendations of the manufacturer. If all beans are not being threshed out, the cylinder speed should be increased or the spacing between cylinder and concave should be decreased. If beans are cracking, decrease cylinder speed or increase spacing between cylinder and concave.

Don't overload your combine by traveling at high speeds. It's wise to vary your forward speed according to the volume of the crop. The tractor motor should run at full throttle to keep the combine up to full speed at all times.

When in doubt, refer to your instruction book. If it doesn't answer your problem, see your dealer.

Whether you grow soybeans for seed or for hay . . . whatever method of seedbed preparation, planting, cultivating, or harvesting you follow — you'll be money ahead with high-quality John Deere soybean equipment working for you.

Money-saving, long-lived tractors . . . clean-scouring, light-draft plows . . . deep-penetrating, easily-controlled disk harrows . . . clod-breaking, weed-killing spike-tooth harrows and rotary hoes . . . accurate planters and drills . . . specially adapted cultivators . . . clean-cutting mowers . . . accurate-tying binders . . . time-, labor-, and money-saving combines — these are but a few of the many John Deere machines that will help you to bigger soybean growing profits.

Your John Deere dealer will do all he can to help you solve your machinery requirements, so keep in touch with him. If you want a free folder on any of the time-, work-, and money-saving John Deere equipment write John Deere, Moline, Illinois.

JOHN DEERE, Moline, Ill.



YES—YOU CAN EXTRACT

*More Pounds of
Soybean Oil*

PER BUSHEL WITH

SKELLYSOLVE



TODAY the eyes of the soybean processing industry are turning to solvents. Higher oil prices are putting a premium greater than ever on the extra *pounds* of oil which can be taken from each bushel of soybeans by the solvent method. New processes enable the solvent processor to tailor-make his meal for any desired use, feeding or industrial.

The Skelly Oil Company has anticipated this growing interest in solvent processing of soybeans, and today is prepared to supply a type of Skellysolve especially adapted to the efficient and economical extraction of soybean oil. Skellysolve's reputation is built on years of experience in the manufacture of all kinds of petroleum hydrocarbon solvents. Write or wire today to the address below, for complete information on Skellysolve Service. There is no obligation.



SKELLYSOLVE
for the SOYBEAN
Industry

There are six different types of Skellysolve which are especially adapted to the efficient extraction of corn germ, soybean, cottonseed, meat scrap, and other vegetable and animal oils. The Skellysolve that is especially refined for extraction of more oil from each bushel of soybeans has the correct boiling range and other special properties which meet the exacting requirements of this particular service.

SKELLYSOLVE

SOLVENTS DIVISION, SKELLY OIL CO.
SKELLY BLDG., KANSAS CITY, MO.